



MANUFACTURE OF STRUCTURAL METAL PRODUCTS

2017







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CEO

According to the **MINISTRY OF DEVELOPMENT** Planning and Statistics data, this sector had **558 MANUFACTURING** establishments that together employed a workforce of **27,398 PERSONNEL IN 2015**.

CEO's MESSAGE

// The gross value added by the sector grew by 18.8 times from QAR149mn in 2001 to QAR2,812mn in 2015.

Small and medium-sized enterprises (SMEs) are essential enablers of Qatar's aspiration to build a diversified and sustainable economy. As the private sector development arm of the Government, we hold our national strategic development agenda – Qatar National Vision 2030 – central to all of our endeavors. We hold a firm belief that it is our core responsibility to contribute to the ongoing efforts of diversifying our sources of national income and creating a knowledge-based economy. We always knew that in order to chart the type of progressive economic and social path envisioned by our State, we need to become imaginative and proactive in our approach for our future generations.

In doing so, QDB's role is not limited to financing enterprises, as it provides SMEs and entrepreneurs with a wide range of non-financial services. Our ultimate objective is to become a "partner of first resort" for Qatar's current and future entrepreneurs and SMEs. Thus, we realized that one of the most important ways to achieve our aspiration is through enabling access to granular market insights and trends, which is a pre-requisite for strong business ventures.

In line with our above objectives to establish a reliable data and analysis, and in order to extend a meaningful support to Qatari entrepreneurs and SMEs, QDB intends to publish a series of reports on potential opportunities available across various sectors in the local market. These series aim to provide entrepreneurs with potential opportunities and perspectives about these sectors, including competitive sectorial landscape and data about existing companies.

This report covers the manufacture of structural metal products in Qatar. This sector comprises product segments, such as structural steel fabrication, pre-engineered buildings, pre-fabricated buildings, architectural steel fabrication and architectural aluminum fabrication. According to the latest statistics published by the Ministry of Development Planning and Statistics (MDPS) in 2016, the domestic production of this sector was valued at QAR6,424mn arising from 558 establishments that employed 27,398 personnel in 2015. The gross value added by the structural metal product sector grew by 18.8 times from QAR149mn in 2001 to an estimated QAR2,812mn in 2015.

All product segments in this sector are driven by the construction and infrastructure sectors, and therefore, are likely to witness substantial demand due to the pipeline of upcoming projects.

I invite readers to go through the report and know more about the sector prospects.

Abdulaziz bin Nasser al-Khalifa
CEO



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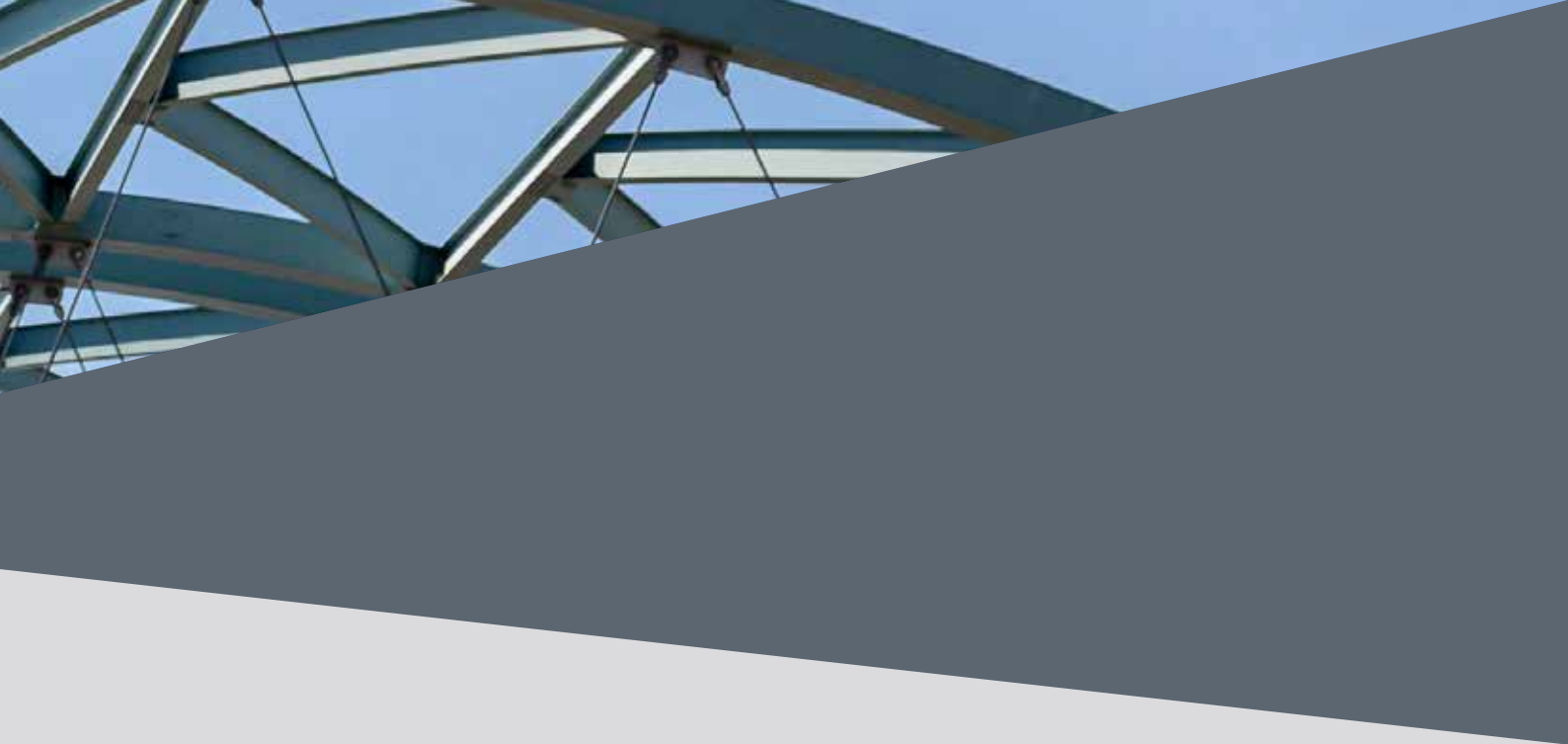


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LIST OF ABBREVIATIONS

ACP	Aluminum Composite Panels	MENA	Middle East And North Africa
BS	British Standards	mm	Millimeter
bn	Billion	mn	Million
BUA	Built-Up Area	MT	Metric Ton
CAGR	Compounded Annual Growth Rate	Nas	Non-Alloy Steel
CBUA	Completed Built-Up Area	nes	Not Elsewhere Specified
Dmtu	Dry Metric Ton Unit	OHSAS	Occupational Health And Safety Assessment Standards
EHS	Environment, Health And Safety	p.a.	Per Annum
EU	European Union	PEB	Pre-Engineered Building
ERW	Electric Resistance Welded	QAR	Qatari Riyal
FIFA	Fédération Internationale De Football Association	QCS	Qatar Construction Specifications
GI	Galvanized Iron	QDB	Qatar Development Bank
GCC	Gulf Cooperation Council	R2	R-Squared
GDP	Gross Domestic Product	SEZ	Special Economic Zones
GOIC	Gulf Organization For Industrial Consulting	SIDF	Saudi Industrial Development Fund
HRC	Hot Rolled Coils	SME	Small And Medium Enterprises
HS Code	Harmonized System Code	Sqm	Square meter
ias	Iron And Steel	TPA	Tons Per Annum
ISIC	International Standard Industrial Classification	UAE	United Arab Emirates
ISO	International Organization For Standardization	UK	United Kingdom
ITC	International Trade Centre	USA	United States Of America
KSA	Kingdom Of Saudi Arabia	USD	United States Dollar
MBS	Metal Building Software	WSA	World Steel Association
MDPS	Ministry Of Development Planning And Statistics		



EXECUTIVE SUMMARY

The structural metal products sector comprises a wide range of finished products that are fabricated using semi-finished products, such as angles, channel sections, sheets and plates of aluminum and steel. These semi-finished products are subjected to many processes, such as bending, cutting, welding, machining and assembling, to produce the desired finished products. These finished products can be classified into product segments such as (a) structural steel fabrication, (b) pre-engineered buildings (PEBs), (c) pre-fabricated buildings, (d) architectural steel fabrication products and (e) architectural aluminum fabrication products. Products from these segments are finished products used in real estate and infrastructure projects.

The construction sector drives the growth of the structural metal products sector. From 2001 to 2015, the sector grew at a CAGR of 19.3% from QAR653mn in 2001 to an estimated QAR7,733mn in 2015¹. According to the latest statistics² published by MDPS in 2016, this sector had 558 manufacturing establishments that together employed a workforce of 27,398 personnel in 2015. The gross value added by the sector grew by 18.8 times from QAR149mn in 2001 to QAR2,812mn in 2015.

Analyzing the 2015 sector composition, structural steel fabrication emerges as the largest segment, constituting 53.1% of the sector in value terms³, followed by architectural aluminum fabrication, which has a 21.4% share. Other product segments such as architectural steel fabrication, pre-fabricated buildings and pre-engineered buildings have sector shares of 12.4%, 10.4% and 2.6%, respectively. Domestic production of raw materials is limited to small steel sections, flat bars, aluminum extrusion profiles and aluminum panels. Qatar is heavily dependent on imports for procuring raw materials, such as steel sheets, plates, angles, channels, rods, pipes and glass, required by the sector.



¹ Team Analysis

² MDPS: Annual Bulletin of Industry & Energy Statistics 2015

³ Team Analysis



Structural Steel Fabrication Segment Overview: Structural steel fabrication comprises constructing load-bearing steel frames (i.e., columns, beams, floors, trusses, etc.) for residential and commercial buildings, industrial facilities and other projects. Driven by the construction sector, the market size for structural steel fabrication grew at a CAGR of 15.7% from 57,482MT (QAR272mn) in 2001 to an estimated 441,684MT (QAR4,107mn) in 2015.

Qatar has 467 firms in the steel fabrication segment. Most steel fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works. The average capacity utilization for structural steel fabrication segment in 2015 was 62.8%.

Due to the slowdown in the construction sector, the market size reduced by 20.9%, in value terms, from QAR4,107mn in 2015 to QAR3,247mn in 2016.

Going forward, the structural steel fabrication market is expected to grow at a CAGR of 4.0% from QAR3,247mn in 2016, to an estimated QAR4,804mn (456,740MT) in 2026.

Each structural steel fabrication work is a unique job order based on its engineering design and can be segmented by project type. The demand is likely to arise from the key segments, such as factory and warehouses (50% share), real estate (15% share) and infrastructure (10% share). Metro rail projects and stadium works are expected to constitute 4% and 2% of the demand, respectively, during 2016 to 2026.

In terms of challenges, the market is likely to remain significantly competitive and price sensitive. Heavy dependence on imports for procurement of raw material and high operational expenses⁴ (salaries, rent, etc.) - as compared to those in other countries such as the UAE and the KSA - would limit export potential⁵ to rare opportunities of up to 2.2% of the domestic production for structural steel fabrication. Imports are likely to constitute 33% to 38% of the market, as they are cheaper than domestic production. These would further heighten the challenges and intensify competitive rivalry. In view of the challenges, key critical success factors include access to raw material linkages, access to market and strategic linkages, operational efficiency and technical know-how.

Large market size means an opportunity⁶ for new players to tap into 2,948MT worth of average incremental business every year, from 2017 to 2026. This implies that subject to competitive challenges, opportunities exist for two mid-sized players (1,800 MT per annum installed capacity running at 80% utilization) to enter the market every year.

In the medium to long term, the opportunities would outweigh the challenges due to the large market size, pipeline of upcoming projects in Qatar and opportunities for civil contractors to integrate backward.

Pre-Engineered Buildings Segment Overview: PEBs use steel plates and sheets to fabricate pre-designed primary and secondary sections for factory sheds, warehouses, hangars and other industrial and commercial buildings.

Driven chiefly by the industrial sector projects, the market size for pre-engineered buildings was estimated to be 33,732MT (QAR201.8mn) in 2015. In terms of value, pre-engineered buildings constitute 2.6%⁷ of the structural metal products sector. The average capacity utilization⁸ for pre-engineered buildings segment was 60% in 2015.

The establishment of a domestic manufacturing facility in 2007 substantially reduced Qatar's dependence on PEB imports from 63% in 2006 to about 38% share of the total market in 2015. Currently, there is only one domestic company (BSI Steel) with a fabrication capacity of 20,000 MTPA that is focused entirely on the fabrication of PEBs. There are also a handful of other steel fabricators that manufacture small volumes of PEB as part of the overall service offerings and were servicing the market from 2001 to 2006. Another player, with a capacity of 30,000MTp.a. is expected to commence production in 2017.

Large scale developments, such as the Special Economic Zones (SEZs) promoted by Manateq, factory sheds, warehouses projects and other industrial projects, would drive the demand for PEBs. On the back of these demand drivers, the market is expected to grow at a CAGR of 4.2% from QAR201.8mn in 2015 to an estimated QAR317.8mn in 2026.

With respect to challenges, the market is likely to remain competitive and price sensitive. Dependence on imports for procurement of raw materials and higher operational expenses (salaries, rents, etc.) than in other countries, such as the UAE and the KSA, would limit export potential to rare opportunities of less than 1% of domestic production.

Given the market size and the growth potential of this segment, driven mainly by factory, warehousing and industrial projects, subject to competitive challenges, new entrepreneurs can benefit from average incremental opportunities worth QAR15mn (1,148MT) per annum from 2017 to 2026. However, as the average incremental business per annum until 2026 is low for offering viable opportunities, entrepreneurs would have to target related segments, such as structural steel fabrication and architectural steel fabrication, and focus on being cost competitive to be able to substitute imports and gain market share from existing players.

^{4,8} Primary Interviews

^{5, 6, 7} Team Analysis



Pre-fabricated Housing Segment Overview: Pre-fabricated buildings use cold-formed sections made from galvanized iron slit coils⁹, light gauge steel sections and various finishing materials such as gypsum boards, aluminum sheets along with rockwool or fiberglass insulation materials to build habitable spaces, such as labor accommodations, site offices, mosques, majlis, villa extensions and security cabins.

Qatar's pre-fabricated buildings market was valued at QAR806mn in 2015, constituting 10.4% of the overall structural metal products sector. The market has witnessed a steady growth wherein the demand has grown from 262,305sqm (QAR193mn) in 2005 to 753,514sqm (QAR806mn) in 2015 indicating a growth of 11.1% in volume and 15.4% in value terms. Qatar has 20 firms operating in this segment. The average capacity utilization for the pre-fabricated buildings segment was 52.3% in 2015. The market size reduced by 33.2% in value terms, from QAR806mn in 2015 to QAR539mn in 2016. The market is expected to grow at a CAGR of 3.8% from QAR539mn in 2016 to an estimated QAR782mn in 2026.

The pre-fabricated buildings market is dominated by larger players with the capacity and capability to focus on a varied mix of products, projects and customers. Domestic players have an upper hand in terms of market knowledge, access to projects, support from their well-established parent companies and quicker turnaround time as compared to importers.

The demand for labor accommodations, which formed the largest share with 58.6% of the 2015 pre-fabricated buildings market in value terms, is likely to be driven by real estate and infrastructure development projects, giving rise to an influx of laborers into Qatar. The pre-fabricated labor accommodation segment is expected to grow, in value terms, at a CAGR of 3.8%, from QAR306mn (316,746sqm) in 2016 to an estimated QAR444mn (360,022sqm) in 2026.

Pre-fabricated private units comprising site offices, majlis, mosques, security kiosks, etc. accounted for 39.8% share of the 2015 pre-fabricated buildings market. This segment is likely to experience a healthy growth rate (CAGR 3.8%) from QAR227mn in 2016 to reach QAR329mn in 2026. The construction of real estate asset classes, such as villas and multi-story residential developments, are likely to be the prime demand drivers for most pre-fabricated private units.

Pre-fabricated greenhouses is a marginal segment constituting only 1.6% of the 2015 pre-fabricated buildings market. These are mainly used for agricultural purposes, such as cultivation of crops, fruits and vegetables within temperature and climate-controlled in-house structures, which have minor opportunities in Qatar. Valued at QAR13mn in 2015, and entirely serviced by imports, it is expected to remain a marginal market valued at less than QAR10mn per annum from 2017 to 2026.

The 2016 market size and growth rate of the pre-fabricated buildings segment till 2026 points to an average incremental opportunity of QAR24.4mn (6,231sqm) per annum, for new

players to tap into from 2017 to 2026, subject to competitive challenges. As the average incremental business per annum till 2026 is low for offering viable opportunities, entrepreneurs would have to focus on being cost competitive to be able to compete and gain market share from established players in the market.

Architectural Steel Fabrication Segment Overview:

Architectural steel fabrication comprises steel products manufactured through the processes of designing, cutting, bending, welding and assembling. These products have decorative and non-load-bearing applications, such as entrance gates, decorative doors, steel flush doors, rolling shutters, staircase handrails, and fencing and grills.

The 2015 architectural steel fabrication market is sized at QAR961mn. Real estate asset classes, such as villas and multi-story residential developments, are likely to be the prime drivers of growth for most architectural products. Key products include grills and fencing (38.5% share), steel staircase railings (26.3% share), entrance gates (15.1% share) and decorative doors (9.7% share).

Qatar has 467 firms in the steel fabrication segment. Most steel fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works. The average capacity utilization for architectural steel fabrication segment in 2015 was 63.8%. Owing to the slowdown in the construction sector, the architectural steel fabrication market size reduced by 34.5%, in value terms, from QAR961mn in 2015 to an estimated QAR629mn in 2016.

Villas are expected to account for 45% of Qatar's upcoming real estate development¹⁰ of 78.9mn sqm over 2016 to 2026. Villas are likely to be a prime driver for most architectural products. On the back of strong demand drivers, the market is expected to grow at a CAGR of 3.7% from QAR629mn in 2016 to an estimated QAR909mn in 2026.

In the architectural steel fabrication market, grills and fencing is the largest segment as it serves the needs of all types of real estate projects as well as those of infrastructure projects. The market would grow at a CAGR of 3.7% from QAR256mn (677,039sqm) in 2016 to reach QAR370mn (764,800sqm) in 2026. Steel staircase railings is another large market as it widely used across all real estate projects. It is expected to grow at a CAGR of 3.7% from QAR160mn (185,661 linear meter) in 2016 to reach QAR231mn (209,727sqm) in 2026. Going forward, the domestic players would continue to dominate the market for products such as entrance gates (63.2% market share), decorative gates (65.7% market share), staircase railings (85.5% market share), and grills and fencing (76.4% market share). These products have greater reliance on the villa segment, which gives them a fragmented customer base, making it difficult for importers to penetrate. As against this, products such as the rolling shutters and steel flush doors form niche markets, mainly driven by commercial developments. As a result, major portion of the

⁹ Primary Interviews

¹⁰ Team Analysis

market for steel flush doors (74.4%) and rolling shutters (74.5%) would be serviced by imports. In terms of challenges, the market is likely to remain significantly competitive and price sensitive. Imports are likely to remain cheaper than domestic production and further heighten the challenges.

The given market size and a moderate pace of growth offer an opportunity for new players to tap into 806MT worth of average incremental business every year from 2017 to 2026, subject to competitive challenges. Subject to competitive challenges, opportunities exist for one medium-sized player (1,800MT per annum installed capacity running at 80% utilization) dedicated to architectural steel fabrication works, to enter the market every two years. Steel flush doors and rolling shutters are dominated by imports and form hard-to-penetrate niche markets. New entrepreneurs can focus on products such as entrance gates, decorative gates, staircase railings, and grills and fencing products. To augment their product portfolio, they can also consider taking up small structural steel fabrication job orders.

In the medium to long term, the strengths and the opportunities outweigh the threats due to a sizable market opportunity, pipeline of upcoming projects in Qatar, fragmented customer base (villa projects), scope for differentiation¹¹ on account of design and creativity, and the localized nature of the product.

Architectural Aluminum Fabrication Segment Overview:

Architectural aluminum fabrication includes aluminum and glass works (aluminum and glass doors and windows, curtain walls, skylights and dome), aluminum sheet cladding works, aluminum staircase handrails and fencing, and solid aluminum doors, windows and partitions.

Architectural aluminum fabrication emerges as the second largest segment constituting 21.4%¹² of the structural metal products sector. The 2015 architectural aluminum fabrication market is sized at QAR1,656mn. Real estate asset classes, such as villas and multi-story residential developments, commercial buildings, public buildings are likely to be the prime driver of architectural products. Key product segments include aluminum and glass works (77.2% share), aluminum doors, windows and partitions (4.6% share), aluminum railings and fencing (1.7% share) and aluminum sheet cladding works (16.5% share).

Qatar has 70 local players in this segment. The average capacity utilization for architectural aluminum fabrication segment in 2015 was 64.8%. Owing to the slowdown in the construction sector, the architectural aluminum fabrication market size reduced by 46.1%, in value terms, from QAR1,656mn in 2015 to an estimated QAR893mn in 2016. The architectural aluminum fabrication market is expected to grow at a CAGR of 4.4% from QAR893mn in 2016 to an estimated QAR1,375mn in 2026.

Aluminum and glass works product segment has followed the real estate development trends. With this product segment, curtain walls emerge as the largest product¹³ accounting for 65% share, followed by aluminum doors and windows at 30%. Skylight and domes have a small share of 5%. In value terms, the aluminum and glass works market would grow at a CAGR of 4.5% from QAR660mn (953,775sqm) in 2016 to reach QAR1,022mn (1,151,172sqm) in 2026.

Demand for aluminum sheet cladding works — commonly used in combination with aluminum and glass curtain wall products vv is estimated to grow at a CAGR of 4.5% from QAR141mn (476,888sqm) in 2016 to reach QAR218mn (575,586sqm) in 2026, mainly driven by commercial developments, public buildings and multi-story residential buildings.

Primary interviews with aluminum and glass fabrication units indicate that due to the high cost of operations and raw material expenses owing to the reliance on imports of glass, Qatar's production is not cost competitive. Hence, aluminum and glass works, and aluminum sheet cladding works are not exported.

Aluminum doors, windows and partitions market is a small market estimated at QAR77mn in 2016. It is likely to grow at a CAGR of 3.4% to reach QAR111mn in 2026. As raw material used (aluminum extrusion) is locally available, export opportunity is estimated at 9.5% of the domestic production between 2016 and 2026. Aluminum staircase railings and fencing is a marginal market valued at QAR16mn in 2016 and set to reach QAR24mn in 2026, pacing at CAGR of 4.3%. Given the low-entry barriers, widespread applications within architectural aluminum fabrication and a large market size, this has been an attractive sector for Qatari entrepreneurs. The market is fiercely competitive, with several firms operating in the market and each targeting the same project.

A large market size and a moderate pace of growth offer an opportunity for new players to tap into 32,738sqm worth of average incremental opportunity every year. Subject to competitive challenges, opportunities¹⁴ exist for two medium-sized player (5,000sqm per month installed capacity, running at 80% utilization) dedicated to architectural aluminum fabrication works, to enter the market every three years. New entrepreneurs focusing on architectural aluminum fabrication need to target on all products such as aluminum and glass works, aluminum sheet cladding works, aluminum doors, windows and partitions, and aluminum railings and fencing.

^{11,13} Primary Interviews

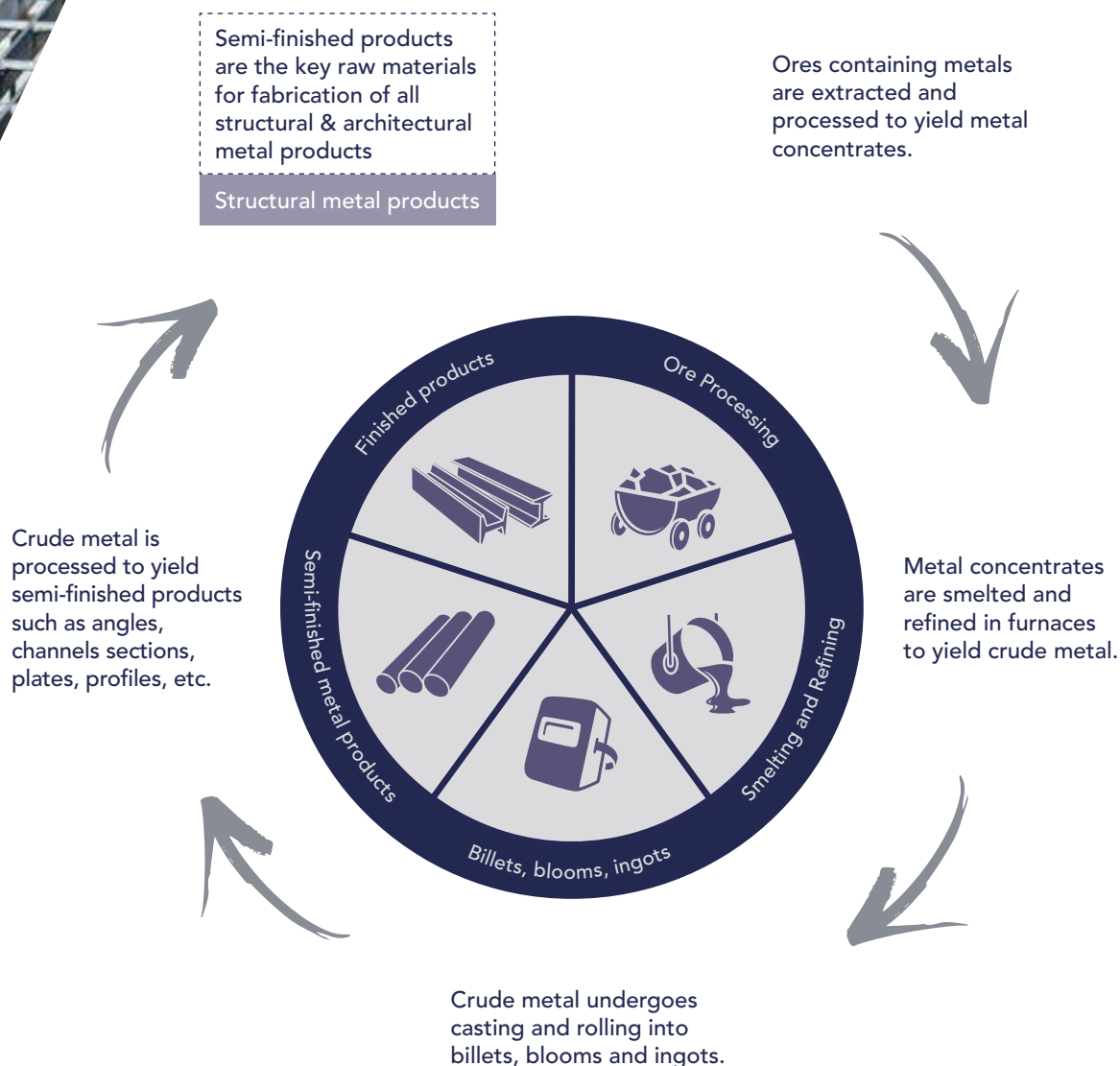
^{12,14} Team Analysis

1. INTRODUCTION

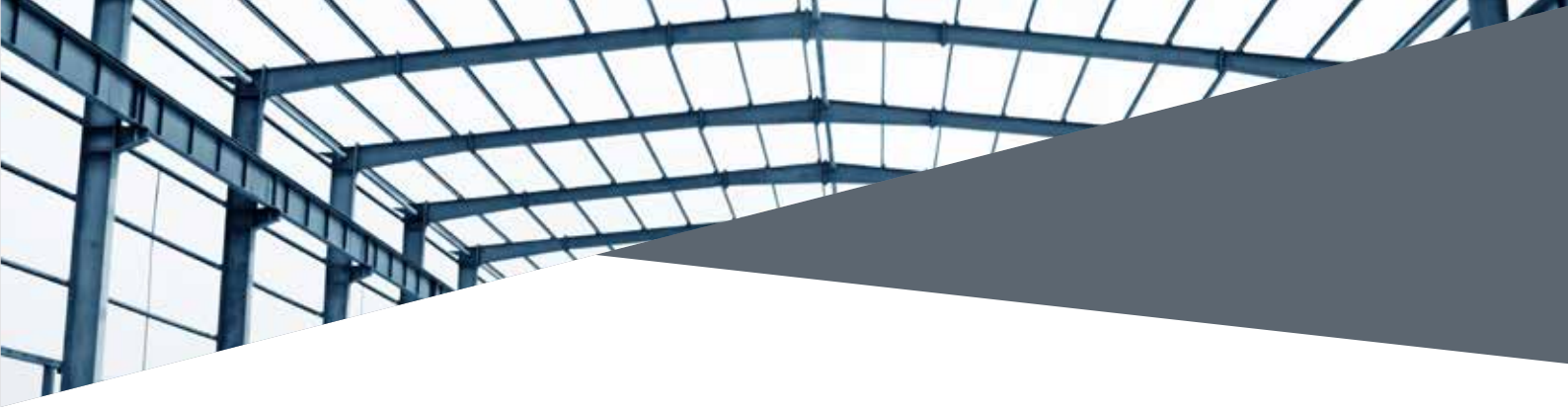
1.1. Sector Overview

Structural metal products are fabricated using semi-finished products such as angles, channels sections, sheets and plates, etc., of aluminum and steel. These semi-finished products are subjected to many processes, such as bending, cutting, welding, machining and assembling, to produce the desired finished products. The figure below indicates the high-level value chain¹⁵ of the sector.

Figure 1: Metal Fabrication Value Chain

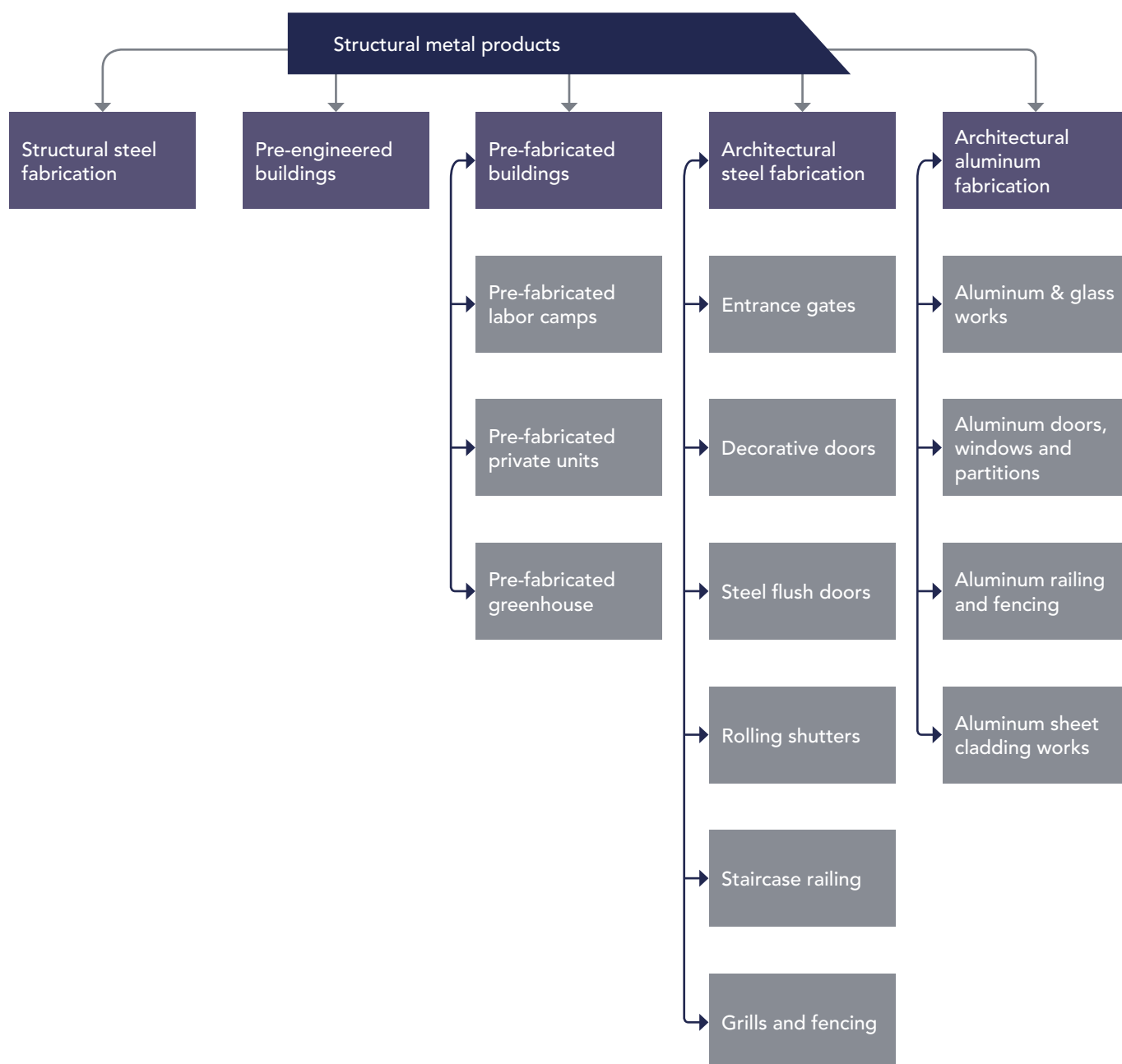


¹⁵ Arcelor Mittal Corporate Presentation



This sector includes a wide range of finished products that can be classified into product segments, such as structural steel fabrication works, pre-engineered buildings (PEB), pre-fabricated building, architectural steel fabrication products and architectural aluminum fabrication products. The illustration below provides detail of the sector and product segments.

Figure 2: Segments under Structural Metal Products



Architectural metal fabrication comprises products that are used for non-load bearing or decorative applications, such as doors and windows, staircase handrails, grills and fencing. Architectural metal products can be made from both aluminum and steel.

Steel is used in structural applications in construction projects due to its good load-bearing properties, low cost and ease of fabrication. Aluminum is not used for structural purposes for construction projects as it is expensive and difficult to weld as compared to steel.

Structural steel fabrication comprises constructing load-bearing steel frames (i.e., columns, beams, floors, trusses, etc.) for residential and commercial buildings, industrial facilities and other projects.

PEBs and pre-fabricated buildings are constructed in modular segments in a factory and then transported and installed at the site. Pre-fabricated buildings use cold-formed sections made from galvanized iron slit coils, light gauge steel sections and various finishing material to build habitable spaces, such as labor accommodations, site offices, mosques, majlis, villa extensions, security cabins, etc.

PEBs use steel plates and sheets to fabricate pre-designed primary and secondary sections for factory sheds, warehouses, hangars, and other industrial and commercial buildings. Based on the above description, this sector can be classified into key product segments and products as shown in the table below.

Table 1. Segments under Structural Metal Products

Structural Metal Product Segments	
Product Segment	Description
Structural steel fabrication	This segment includes construction works for load-bearing steel frames (i.e., columns, beams, floors, trusses, etc.) for residential and commercial buildings, industrial facilities and other projects.
PEBs	This segment includes pre-engineered structures made of sheets and plates for warehouses, factory sheds, hangars, etc.
Pre-fabricated buildings	This segment includes pre-fabricated labor accommodation, pre-fabricated private units (site offices, mosques, majlis, security kiosks and rooms for drivers or maids) and pre-fabricated green houses.
Architectural steel fabrication	This segment includes entrance gates, decorative doors, steel flush doors, rolling shutters, staircase handrail, and grills and fencing.
Architectural aluminum fabrication	This segment includes: (a) aluminum and glass works (aluminum and glass doors and windows, curtain wall, skylight and domes); (b) aluminum sheet cladding works; (c) aluminum railing and fencing; and, (d) all aluminum doors, windows and partitions.

1.1.1. Structural Steel Fabrication

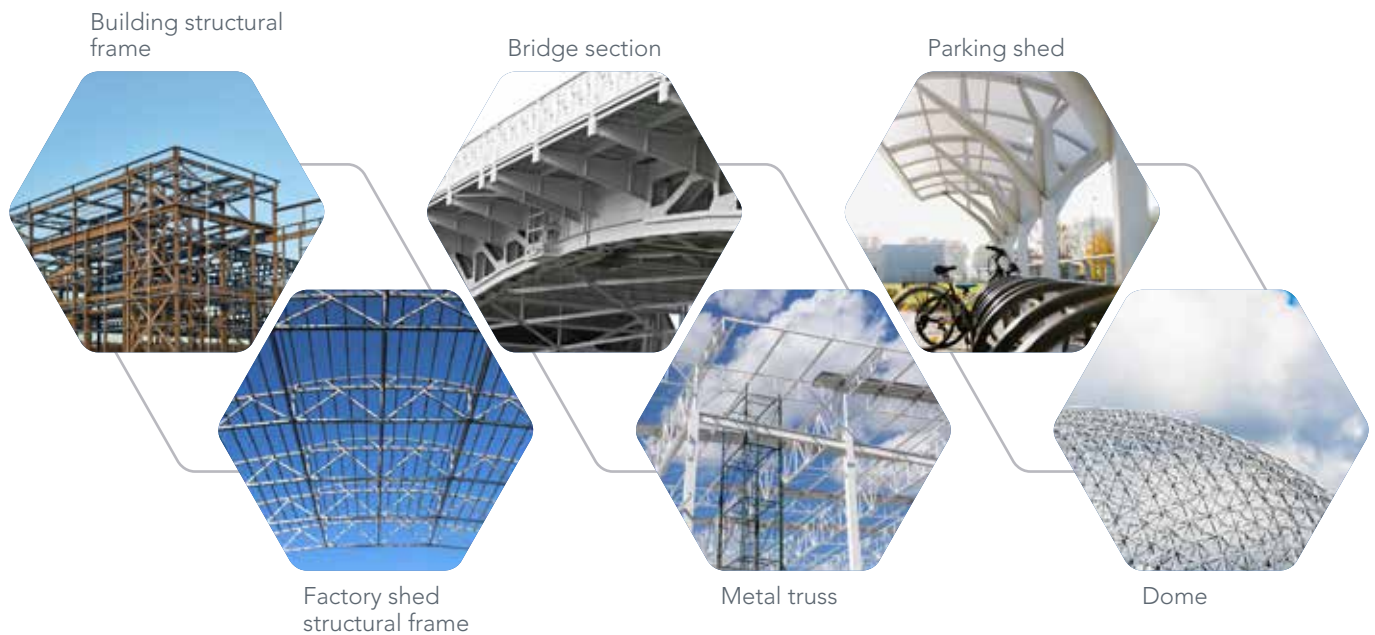
Structural steel fabrication can be defined as the design, fabrication and erection of a steel structure through organized combination of structural steel members and sections, designed to carry loads and provide a strong and stiff frame¹⁶. Structural steel fabrication comprises fabrication of steel frames used in buildings, construction and infrastructure projects. These include steel frames, beams, trusses, towers, masts, bridges and bridge sections, sheet piling, sheds and domes. These are highly engineered or designed products as they are load-bearing elements.

Structural steel sections are used as load-bearing members, such as columns, beams, girders, trusses and portal frame. These come in various shapes such as I-section, H-section, L-angles and T-sections. Hot-rolled I-sections and steel plates are the most commonly used raw materials.

Structural steel is extensively used for infrastructure projects, such as metro and train stations, stadiums, bridges, industrial facilities, low-rise commercial and retail buildings as well as the construction of high-rise buildings.

Common steel varieties used for structural steel are carbon steel and high-strength low-alloy steels. These alloys can be heat treated (quenched and tempered) for enhanced mechanical properties and also be made corrosion resistant. The physical properties of steel —high strength, ductility, seismic resistance, elasticity, uniformity of material, ease of fabrication and speed of erection — make it a preferred choice for structural projects.

¹⁶ Steel Construction Encyclopedia



1.1.2. Pre-engineered Buildings (PEBs)

The PEB segment includes fabrication of steel structures built over a structural concept of primary members, secondary members, roof and wall sheeting connected to each other and various other building components. Pre-engineered steel buildings use a combination of pre-designed sections made from steel plates and cold-formed sections made from sheets.

These form the basic steel framework that can be either covered by a single skin sheeting with added insulation or insulated sandwich panels for roofing and wall cladding. Such PEBs can be designed to be fitted with different structural accessories such as mezzanine floors, canopies, interior partitions and crane systems, among others.

PEBs enable quicker and economical creation of industrial buildings, factory sheds and warehouse infrastructure. They are ideal for such structures where the intermediate columns need to be avoided to enable free movement of goods and machinery. PEBs are fabricated based on the end user's requirement in a factory and erected on site, which helps save time. PEBs can be delivered to a site within five to eight weeks, while conventional steel structures can take up to 25 weeks to complete¹⁷. The unique techniques employed during fabrication help PEBs to be up to 30% lighter than regular steel fabrication using hot-rolled sections. No welding or fabrication is required at the construction site, resulting in greater speed and efficiency.



¹⁷ Primary Interviews

1.1.3. Pre-fabricated Buildings

Pre-fabricated buildings are constructed in modular segments in a factory and then transported and installed at the site. Walls of pre-fabricated buildings are load-bearing elements that are constructed from cold-formed sections made from slit coils of galvanized iron (GI). These sections are covered by gypsum boards and the in-between space is filled with insulating materials such as rockwool or fiberglass. The wall thickness can be between 100mm and 300mm, depending on the number of floors of the structure. As pre-fabricated buildings are engineered with load-bearing walls (as against the column-beam frame structure used in conventional reinforced cement concrete buildings), the maximum height of a pre-fabricated building is seven floors.

Cold-form sections are used to fabricate the roof truss as well. A variety of finishing material can be used for external cladding, flooring and roofing works. Only steel is used for the construction of the cold-formed sections of pre-fabricated buildings, while aluminum sheets may be used as an external finishing material on the walls of pre-fabricated buildings.

Pre-fabricated buildings are different from PEBs in terms of raw material and construction technique. Pre-fabricated buildings use slit coils of galvanized iron (0.95mm to 2mm sheets) to fabricate sections while pre-engineered buildings use hot-rolled plates (8mm to 10mm thickness) that are considerably heavier. In case of pre-fabricated buildings, cold-formed GI sections are not welded, but in case of pre-engineered buildings, steel plates have to be welded to construct the sections.

Pre-fabricated buildings can be used for a variety of applications, such as labor accommodations, site offices, mosques, majlis, villa extensions and security cabins.

The cost of pre-fabricated buildings is almost the same as traditionally constructed buildings; however, the construction time¹⁸ is 40% lesser, hence they can be installed and occupied in a shorter span of time. Modular pre-fabricated units are typically 12mx2.5m in size, which makes it easier to transport.



¹⁸ Team Analysis and Primary Interviews

1.1.4. Architectural Steel Fabrication

Architectural steel fabrication comprises steel products made by designing, cutting, bending, welding and assembling processes. These products are used for decorative and non-load-bearing applications, such as entrance gates, decorative doors, steel flush doors, rolling shutters, staircase handrails, and fencing and grills. Architectural steel fabrication products may use decorative accessories of other metals, such as aluminum and brass.



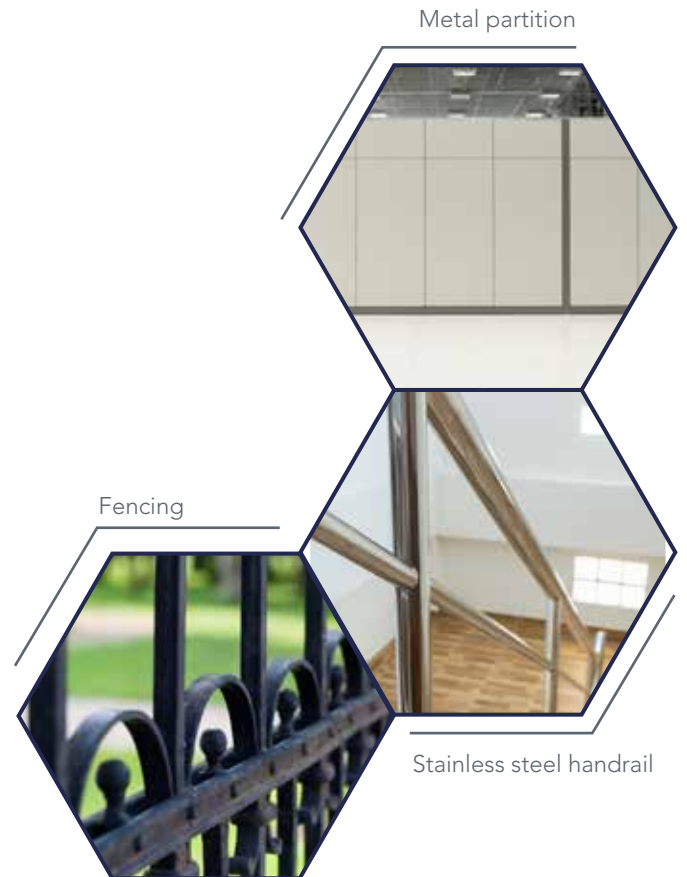
Entrance gates are the main gates installed along the compound walls of various buildings. Decorative doors are fabricated with intricate designs and patterns. Steel flush doors include fire-rated doors installed at the fire staircase and lobby areas, and non-fire-rated doors for other purposes.

Architectural steel works serve the needs of a variety of projects, such as villas, multi-story residential buildings, public buildings, commercial buildings and others.

1.1.5. Architectural Aluminum Fabrication

This segment includes products that are similar to architectural steel fabrication; however, the metal used here is aluminum instead of steel. Architectural aluminum fabrication includes aluminum and glass works (aluminum and glass doors and windows, curtain walls, skylights and dome), aluminum sheet cladding works, aluminum handrails and fencing, and all aluminum doors, windows and partitions.

Curtain walls are commonly referred to as glass facades or glazing systems that consist of non-structural cladding systems for the external walls of buildings¹⁹. These are generally associated with large, high-rise buildings that comprise a lightweight aluminum frame onto which glass can be fixed. Skylights consist of roof openings covered with translucent or transparent glass designed to allow daylight into the building enclosure²⁰. Often skylight, or a portion of it, functions as an operating window to admit air, has found wide application in industrial, commercial and residential buildings. Aluminum sheet cladding works involve cladding of solid aluminum sheets or aluminum composite panels (ACP) on external or internal facades of building.



¹⁹ Designing Buildings Ltd

²⁰ Encyclopedia Britannica

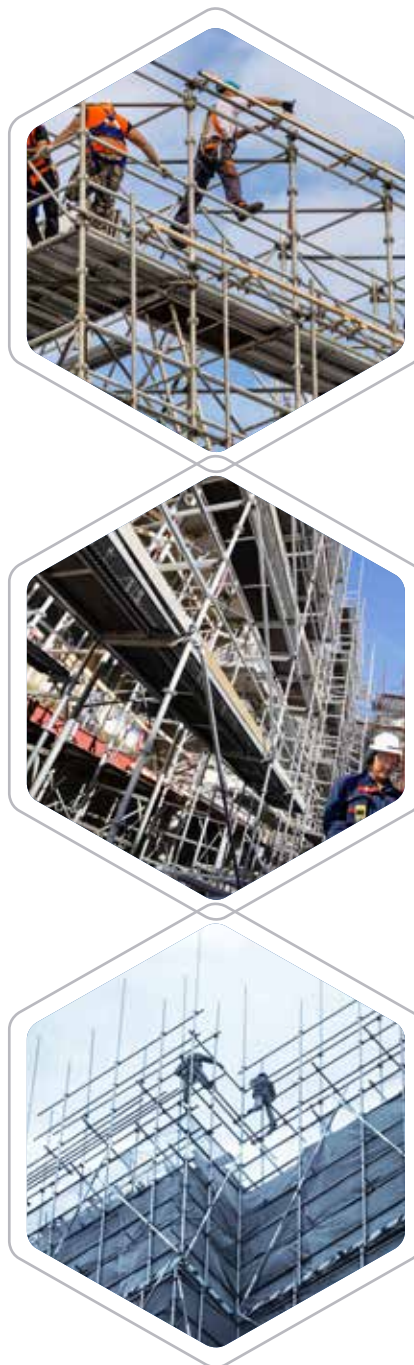
1.1.6. Scaffolding

This segment includes metal scaffolding that are temporary structures used for supporting formwork during construction of buildings and are used by workers while building, repairing or cleaning the building. These bear the load of concrete and other construction products during construction. The structures are made using hollow sections, pipes and metal poles.

The scaffolding market²¹ in Qatar is currently limited to the provision of solutions and services for design, erection and dismantling of scaffolding structures. This market is mainly served by importing scaffolding structures and couplings these are further rented or leased to construction companies. Some of the leading companies include PERI, Cape, Doka, Marcegaglia, Dutco Balfour Beatty and Access Middle East (ACE), which have their manufacturing facilities outside Qatar in various locations, such as Saudi Arabia, the UAE, Germany and Italy. Some of the domestic scaffolding solution providers include Apollo Enterprises, Malzamat Qatar, KEMCO Coating & Scaffolding, Affix Scaffolding, Qatar Plant Hire (Division of Teyseer Group), BICT Qatar, United International Company and Delmon Scaffolding. Currently, there are no domestic scaffolding manufacturers based in Qatar. According to primary interviews, one local firm was set up to manufacture scaffolding by importing raw materials (hot-rolled coils, ERW pipes); however, it was unable to succeed in the market.

Scaffolding manufacturing in Qatar is not considered to be feasible²² due to the following reasons:

1. Business with high volumes and low margins
2. Unavailability of domestic supply of raw materials at competitive rates
3. Stiff competition from dominant scaffolding service providers that are well established in the market, making it difficult to manufacture scaffolding structures using imported raw materials.



²¹ Primary Interviews

²² Team Analysis

1.2. HS Codes of Product Segments

1.2.1. Structural Steel Fabrication

Table 2. HS Codes of Structural Steel Fabrication Products

HS Codes and Description of Structural Steel Fabrication Products		
HS code	Product Type	Description
73011000	Sheet piling	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; sheet piling
73012000	Sheet piling	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; angles, shapes and sections
73081000	Steel bridges and bridge sections	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; bridges and bridge sections
73082000	Steel towers and lattice masts	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; towers and lattice masts)
73089060	Miscellaneous: steel sheds and domes	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); others: sheds and domes
73089090	Miscellaneous: steel others	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); others: other

1.2.2. Pre-engineered Buildings (PEBs)

Table 3. HS Codes of PEBs

HS Codes and Description of Pre-engineered Buildings		
HS code	Product Segment	Description
94060033	PEB	Prefabricated buildings of iron: Warehouses
94060043	PEB	Prefabricated buildings of aluminum: Warehouses
94060013	PEB	Prefabricated buildings of plastics: Warehouses
94060023	PEB	Prefabricated buildings of wood: Warehouses
94060053	PEB	Prefabricated buildings of fiberglass: Warehouses

Note²³: PEBs are dismantled and shipped during exports. Different components are captured in different HS codes by material type. Hence, HS codes are related to products, by type of buildings.

²³ Primary Interviews

1.2.3. Pre-fabricated Buildings

Table 4. HS Codes of Pre-fabricated Buildings

HS Codes and Description of Pre-fabricated Buildings		
HS code	Product Sub-segment	Description
94060011	Pre-fabricated green houses	Pre-fabricated buildings of plastics: Greenhouses for cultivation purposes
94060014	Pre-fabricated labor camps	Pre-fabricated buildings of plastics: Buildings for residence or school
94060019	Pre-fabricated private units	Pre-fabricated buildings of plastics: Other
94060021	Pre-fabricated green houses	Pre-fabricated buildings of wood: Greenhouses for cultivation purposes
94060024	Pre-fabricated labor camps	Pre-fabricated buildings of wood: Buildings for residence or school
94060029	Pre-fabricated private units	Pre-fabricated buildings of wood: Other
94060031	Pre-fabricated green houses	Pre-fabricated buildings of iron: Greenhouses for cultivation purposes
94060034	Pre-fabricated labor camps	Pre-fabricated buildings of iron: Buildings for residence or school
94060039	Pre-fabricated private units	Pre-fabricated buildings of iron: Other
94060041	Pre-fabricated green houses	Pre-fabricated buildings of aluminum: Greenhouses for cultivation purposes
94060044	Pre-fabricated labor camps	Pre-fabricated buildings of aluminum: Buildings for residence or school
94060049	Pre-fabricated private units	Pre-fabricated buildings of aluminum: Other
94060051	Pre-fabricated green houses	Pre-fabricated buildings of fiberglass: Greenhouses for cultivation purposes
94060054	Pre-fabricated labor camps	Pre-fabricated buildings of fiberglass: Buildings for residence or school
94060059	Pre-fabricated private units	Pre-fabricated buildings of fiberglass: Other
94060090	Pre-fabricated private units	Pre-fabricated buildings of other materials

Note²⁴: Pre-fabricated buildings are dismantled and shipped during exports. Different components are captured in different HS codes by material type. Hence, HS codes are related to products, by type of buildings.

²⁴ Primary Interviews

1.2.4. Architectural Steel Fabrication

Table 5. HS Codes of Architectural Steel Fabrication Products

HS Codes and Description of Architectural Steel Fabrication Products		
HS code	Product Sub-segment	Description
73083000	Steel doors and windows	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; doors, windows and their frames and thresholds for doors)
73089050	Steel staircase railing	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; other: staircases, fixed)
73142000	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; grill, netting and fencing, welded at the intersection, of wire with a maximum cross sectional dimension of 3mm or more and having a mesh size of 100 sq cm or more
73143100	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; other grill, netting and fencing, welded at the intersection: plated or coated with zinc
73143900	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; other grill, netting and fencing, welded at the intersection: other
73144100	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; other cloth, grill, netting and fencing: plated or coated with zinc
73144200	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; other cloth, grill, netting and fencing: coated with plastics
73144900	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; other cloth, grill, netting and fencing: other
73145000	Steel grills and fencing	Cloth (including endless bands), grill, netting and fencing, of iron or steel wire; expanded metal of iron or steel; expanded metal

1.2.5. Architectural Aluminum Fabrication

Table 6. HS Codes of Architectural Aluminum Fabrication

HS Codes and Description of Architectural Aluminum Fabrication		
HS code	Product Sub-segment	Description
76101010	Aluminum doors, windows and partition	Aluminum structures (excluding pre-fabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, bal: doors, windows and their frames and thresholds for doors: electrically operated doors for garages
76109040	Aluminum staircase railing and fencing	Aluminum structures (excluding pre-fabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors, bal: other: staircases, fixed
76109050	Aluminum doors, windows and partition	Aluminum structures (excluding pre-fabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames and thresholds for doors) bal: other: wall partitions for hospital ward, restaurants, offices, bathroom, buildings and the like
76169960	Aluminum staircase railing and fencing	Other articles of aluminum; other: other: fencing pillars
76101090	Aluminum doors, windows and partition	Aluminum structures (excluding pre-fabricated buildings of heading 94.06) and parts of structures (for example, bridges and bridge-sections, towers, lattice masts, roofs, roofing frameworks, doors and windows and their frames, and thresholds for doors) bal: doors, windows and their frames and thresholds for doors: other

1.3. Raw Materials

Raw materials used in the manufacture of product segments from this sector include products such as angles, channels, sections, sheet and plates, which are imported from other countries or procured from local traders. Currently, a small volume of steel angles, channels, aluminum composite sheets and aluminum profiles are manufactured²⁵ in Qatar. Most aluminum and steel fabricators²⁶ rely heavily on import of raw material from the UAE, China, India and Turkey.

Table 7. Raw Materials Consumed

Raw Materials Consumed in Metal Fabrication	
Product Segment	Raw Materials
Architectural and structural steel fabrication	Steel angles, channels, sections, rods, sheets and plates, consumables, paint, etc.
PEBs	Steel plates and sheets, consumables, paint, etc.
Pre-fabricated buildings	Galvanized iron slit coils, hot-rolled sections for plinth support and footing on ground. Exteriors made from various materials, such as rockwool, fiberglass, wood and aluminum-based on user specifications
Architectural aluminum fabrication	Aluminum profiles, aluminum sheets, glass, silicon, paint, consumable, etc.

^{25, 26} Primary Interviews

1.3.1. HS codes of Raw Materials

Table 8. HS Codes of Steel Raw Materials

HS Codes of Steel Raw Materials		
HS code	Product Type	Description
72081000	Hot-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated in coils, not further worked than hot-rolled, with patterns in relief
72082500	Hot-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot rolled, pickled: of a thickness of 4.75mm or more
72082600	Hot-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot rolled, pickled: of a thickness of 3mm or more but less than 4.75mm
72082700	Hot-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot-rolled, pickled: of a thickness of less than 3 mm
72083600	Hot-rolled plates	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot-rolled: of a thickness exceeding 10mm
72083700	Hot-rolled plates	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot-rolled: of a thickness of 4.75mm or more, but not exceeding 10mm
72083800	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot-rolled: of a thickness of 3mm or more, but less than 4.75mm
72083900	Hot-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, in coils, not further worked than hot-rolled: of a thickness of less than 3mm
72084000	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated, not in coils, not further worked than hot-rolled, with patterns in relief
72085100	Hot-rolled plates	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, not in coils, not further worked than hot-rolled: of a thickness exceeding 10mm
72085200	Hot-rolled plates	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, not in coils, not further worked than hot-rolled: of a thickness of 4.75mm or more but not exceeding 10mm

HS Codes of Steel Raw Materials		
HS code	Product Type	Description
72085300	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, not in coils, not further worked than hot-rolled: of a thickness of 3mm or more, but less than 4.75mm
72085400	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, hot-rolled, not clad, plated or coated. Other, not in coils, not further worked than hot-rolled: of a thickness of less than 3mm
72089000	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of width 600mm or more, hot-rolled, not clad, plated or coated. Other
72091500	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. In coils, not further worked than cold-rolled (cold-reduced): of a thickness of 3mm or more
72091600	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. In coils, not further worked than cold-rolled (cold-reduced): of a thickness exceeding 1mm but less than 3mm
72091800	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. In coils, not further worked than cold-rolled (cold-reduced): of a thickness of less than 0.5mm
72092500	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. Not in coils, not further worked than cold-rolled (cold-reduced): of a thickness of 3mm or more
72092600	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. Not in coils, not further worked than cold-rolled (cold-reduced): of a thickness exceeding 1mm, but less than 3mm
72099000	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of 600mm or more, cold-rolled (cold-reduced), not clad, plated or coated. Other
72111300	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of less than 600 mm, not clad, plated or coated. Not further worked than hot-rolled: rolled on four faces or in a closed box pass, of a width exceeding 150mm and a thickness of not less than 4mm, not in coils and without patterns in relief
72111400	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of less than 600mm, not clad, plated or coated. Not further worked than hot-rolled. Other, of a thickness of 4.75mm or more
72111900	Hot-rolled sheets	Flat-rolled products of iron or non-alloy steel, of a width of less than 600mm, not clad, plated or coated. Not further worked than hot-rolled. Other

HS Codes of Steel Raw Materials		
HS code	Product Type	Description
72112300	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of less than 600mm, not clad, plated or coated. Not further worked than cold-rolled (cold reduced): containing by weight less than 0.25% of carbon
72112900	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of less than 600mm, not clad, plated or coated. Not further worked than cold-rolled (cold-reduced): Other
72119000	Cold-rolled coils	Flat-rolled products of iron or non-alloy steel, of a width of less than 600mm, not clad, plated or coated. Other
72161000	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. U-, I- or H- sections, not further worked than hot-rolled, hot drawn or extruded, of a height of less than 80mm
72162100	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. L- or T-sections, not further worked than hot-rolled, hot drawn or extruded, of a height of less than 80mm: L-sections
72162200	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. L- or T-sections, not further worked than hot-rolled, hot drawn or extruded, of a height of less than 80mm: T-sections
72163100	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. U-, I- or H- sections, not further worked than hot-rolled, hot drawn or extruded of a height of 80mm or more: U-sections
72163200	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. U-, I- or H-sections, not further worked than hot-rolled, hot drawn or extruded of a height of 80mm or more: I-sections
72163300	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. U-, I- or H-sections, not further worked than hot-rolled, hot drawn or extruded of a height of 80mm or more: H-sections
72164000	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. L- or T-sections, not further worked than hot-rolled, hot drawn or extruded, of a height of 80mm or more
72165000	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. Other angles, shapes and sections, not further worked than hot-rolled, hot drawn or extruded
72166100	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. Angles, shapes and sections, not further worked than cold formed or cold finished: obtained from flat-rolled products
72166900	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. Angles, shapes and sections, not further worked than cold formed or cold finished: Other
72169100	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. Other: cold formed or cold finished from flat-rolled products
72169900	Angles, shapes and sections	Angles, shapes and sections of iron or non-alloy steel. Other
72191100	Hot-rolled plates	Flat-rolled products of stainless steel, of a width of 600mm or more. Not further worked than hot-rolled, in coils: of a thickness exceeding 10mm
72191200	Hot-rolled plates	Flat-rolled products of stainless steel, of a width of 600mm or more. Not further worked than hot-rolled, in coils: of a thickness of 4.75mm or more but not exceeding 10mm
72192100	Hot-rolled plates	Flat-rolled products of stainless steel, of a width of 600mm or more. Not further worked than hot-rolled, not in coils: of a thickness exceeding 10mm

HS Codes of Steel Raw Materials		
HS code	Product Type	Description
72192200	Hot-rolled plates	Flat-rolled products of stainless steel, of a width of 600mm or more. Not further worked than hot-rolled, not in coils: of a thickness of 4.75mm or more but not exceeding 10mm
72193100	Cold-rolled plates	Flat-rolled products of stainless steel, of a width of 600mm or more. Not further worked than cold-rolled (cold reduced): of a thickness of 4.75mm or more
72201100	Hot-rolled plates	Flat-rolled products of stainless steel, of a width of less than 600mm.: Not further worked than hot-rolled: of a thickness of 4.75mm or more
72224000	Angles, shapes and sections	Other bars and rods of stainless steel; angles, shapes and sections of stainless steel. Angles, shapes and sections
72287000	Angles, shapes and sections	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. Angles, shapes and sections
73063000	Hollow sections	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel. Other, welded, of circular cross section, of iron or non-alloy steel
73064000	Hollow sections	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel. Other, welded, of circular cross section, of stainless steel
73065000	Hollow sections	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel. Other, welded, of circular cross section, of other alloy steel
73066000	Hollow sections	Tubes, pipes and hollow profiles, welded, having a non-circular cross section, of iron or steel (excluding seamless, and line pipe of a kind used for oil or gas pipelines or casing and tubing of a kind used in drilling for oil or gas)
73066100	Hollow sections	Of square or rectangular cross-section
73066900	Hollow sections	Other, welded, of non-circular cross section of other non-circular cross section
73069000	Hollow sections	Other tubes, pipes and hollow profiles (for example, open seam or welded, riveted or similarly closed), of iron or steel. Other

Table 9. HS Codes of Aluminum Raw Materials

HS Codes of Aluminum Raw Materials		
HS code	Product Type	Description
76042100	Aluminum profiles	Aluminum bars, rods and profiles hollow profiles
76042900	Aluminum profiles	Aluminum bars, rods and profiles, other
76082000	Aluminum profiles	Aluminum tubes and pipes of aluminum alloys
76061200	Aluminum sheets	Aluminum plates, sheets and strip, of a thickness exceeding 0.2 mm.: Rectangular (including square) : Of aluminum alloys



2. STRUCTURAL STEEL FABRICATION

2.1. Qatar Market Overview

Structural steel fabrication is an important part of the structural metal products sector. It includes the fabrication of load bearing structural frame comprising columns, beams, trusses, etc., for a wide range of projects, such as factory sheds, warehouses, infrastructure projects, stadia, real estate development and other industrial sector projects.

In terms of market size, in 2015, the structural steel fabrication market was valued at QAR4,107mn²⁷, forming 53.1% of the structural metal products sector that was sized at QAR7,733mn in 2015.

Due to the slowdown in the construction sector, the market size reduced by 20.9%, in value terms, from QAR4,107mn in 2015 to QAR3,247mn in 2016.

Qatar has 467 firms in the steel fabrication segment. Most steel fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works.

Qatar's focus on economic diversification and the development of the SME sector would offer impetus to the manufacturing sector. Industrial developments are expected to form²⁸ 65% of the market opportunity in the structural steel fabrication market.

Going forward, the structural steel fabrication market is expected to grow at a CAGR of 4.0% from QAR3,247mn in 2016 to an estimated QAR4,804mn (456,740MT) in 2026.

2.1.1. Demand-Side Analysis

2.1.1.1. Historical and Current Market Size

Between 2001 and 2003, Qatar's structural steel fabrication market²⁹ was relatively flat, with demand ranging from 53,243MT to 57,482MT per annum. The steel fabrication demand received a major boost in 2004, when the market grew nearly 2.88 times in a single year to reach 165,146MT in 2004, chiefly on account of the new industrial developments and demands arising from the construction work related to the Asian Games 2006, such as stadia, The Torch, Doha building and other projects.

Thereon, driven by the increased industrial developments, real estate boom and Qatar Government's construction sector spend, the market size grew from strength to strength, pacing up rapidly at a CAGR of 22.5% to reach 454,995MT in 2009.

Between 2003 and 2008, the global macroeconomic factors drove commodity prices northward. On the back of buoyant demand, in quantity terms and escalating crude steel prices, Qatar's structural steel fabrication market grew nearly 13.8 times in value terms, from QAR331mn in 2004 to QAR4,547mn in 2009.

The impact of the global financial crisis of 2008 and 2009 on Qatar's steel fabrication market size was observed in 2010. Many projects launched during 2004 and 2008 were due for completion in 2008 and 2009, the impact of the slowdown was witnessed in 2010, with a lag of 12 to 18 months.

In 2009 and 2010, in terms of value and quantity, the market shrank 52.3% and 41.2%, respectively. This was likely as the demand slowed down and steel commodity prices crashed simultaneously. The decline continued until 2011, post which the market

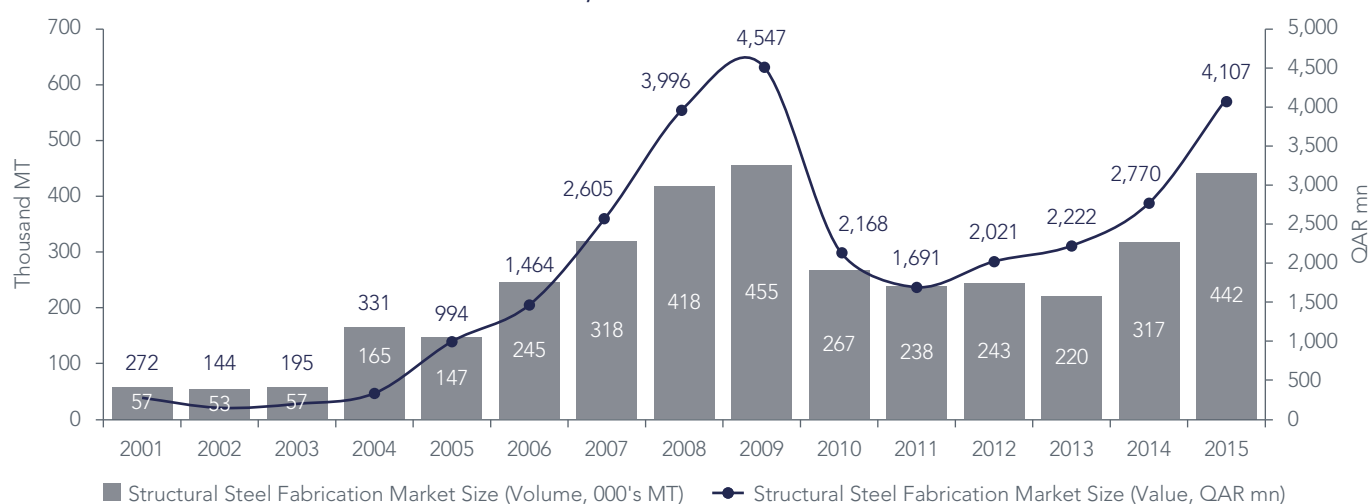
^{27,29} Team Analysis

²⁸ Primary Interviews

sentiment started improving due to the Qatar Government's successful bid for the FIFA World Cup 2022, increasing government's expenditure and launch of new projects.

Qatar's structural steel fabrication market grew from 237,981MT in 2011 to reach an estimated 441,684MT in 2015, registering a CAGR of 16.7% during this period.

Chart 1. Qatar's Structural Steel Fabrication Demand, 2001 to 2015



Source: Team Analysis, MDPS Annual Bulletin of Industry and Energy Statistics 2001-2015, ITC Trademap

2.1.1.2. Market Size Segmentation by Products

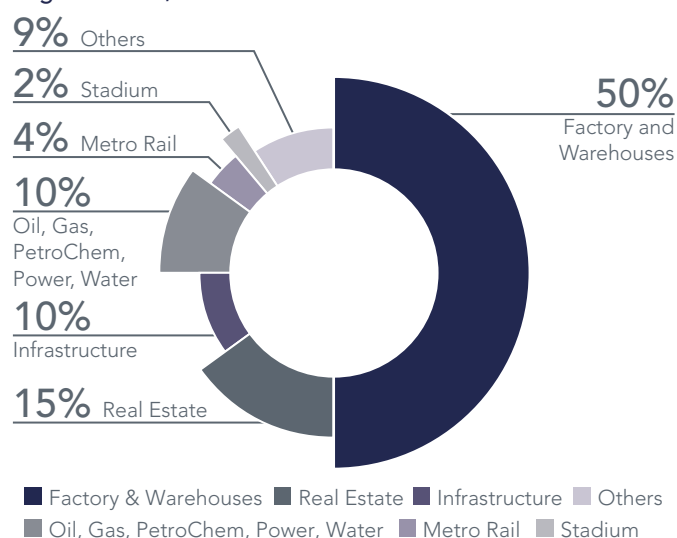
The 2015 market for structural steel fabrication amounted to 441,684MT³⁰. Primary interviews with steel fabrication units indicate that structural steel fabrication for factory sheds and warehouses form 50% of the demand followed by real estate developments at 15% and infrastructure projects at 10%. Steel fabrication demand arising from oil and gas, petrochemical, water and power sector projects together formed 10% of this segment. Thus, industrial developments constituted 65% of the demand.

2.1.1.3. Demand Drivers

Demand Drivers: Demand for structural steel fabrication is chiefly driven by factory sheds and warehouses, followed by commercial projects and infrastructure developments (airports, seaports, metro rail stations, etc.).

Customer Segment: Steel fabrication units³¹ in the Qatar market opine that civil contractors are the customer segment. As structural steel fabrication products are load-bearing elements, they are procured by contractors at the construction commencement stage.

Chart 2. Structural Steel Fabrication Market Segmentation, 2015



Source: Team Analysis, Primary Interviews

³⁰ Team Analysis

³¹ Primary Interviews

Key Influencers: Engineering consultants can influence the decision on the selection of structural steel fabrication units. Consultants estimate the steel requirement, choose the specifications, and incorporate them in their designs and tenders. They may evaluate the tender for compliance with requirements. Primary interviews indicate that apart from cost competitiveness, being listed as an approved vendor with consultants is important. In some cases, business relationships (backward integration with steel fabrication units with civil contractors) may also influence the decision.

2.1.1.4. Demand Forecast

Due to the slowdown in the construction sector, the market size³² reduced by 20.9%, in value terms, from QAR4,107mn in 2015 to QAR3,247mn in 2016.

Going forward, the structural steel fabrication market is expected to grow at a CAGR of 4.0% from QAR3,247mn in 2016, to an estimated QAR4,804mn (456,740MT) in 2026.

The projected market size includes structural steel fabrication work for the metro rail stations and world cup stadia. The demand from metro railway stations would arise in two phases³³ in accordance with their respective construction schedules: the first schedule during 2015 and 2018, with most of it concentrated in 2016 and 2017, and the second schedule during 2022 and 2024. The metro rail project is estimated to require 198,080MT of structural steel fabrication works. During 2016, 2017 and 2022 to 2024, the country is likely to witness increased opportunities as compared to other years, as most of the structural steel works for metro rail (phase 1 and phase 2) are expected to be executed during these years.

For the FIFA World Cup 2022, steel fabrication work for stadium is expected to be executed during 2014 and 2019, with most of it taking place during 2015 and 2017 where stadia would require 104,224MT of structural steel fabrication works.

Chart 3. Qatar's Structural Steel Fabrication Demand Forecast, 2015 to 2026



Source: Team Analysis, MDPS Annual Bulletin of Industry and Energy Statistics 2001-2015, ITC Trademap

³² Team Analysis

³³ Zawya Database on projects in Qatar

2.1.2. Supply-Side Analysis

2.1.2.1. Market Structure

The structure of Qatar's structural steel fabrication market that comprises about 467 firms is fragmented. Based on their capacities, structural steel fabrication firms can be classified as large, medium and small. Most steel fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works.

Small-sized Firms



Based on insights from primary interviews, these firms have capacities not greater than 380MT per annum. These units have less than 10 employees and 30% of their capacities³⁴ focus on structural steel fabrication works for small to mid-sized projects, such as low-rise residential buildings and small commercial establishments. Small job orders, such as roof-over parking areas, small storage sheds, metal roofs on terraces gardens and other miscellaneous works, are done by small players. Qatar has 194 such firms who collectively control 1.0% share³⁵ of the structural steel fabrication sales by domestic players.

Medium-sized Firms



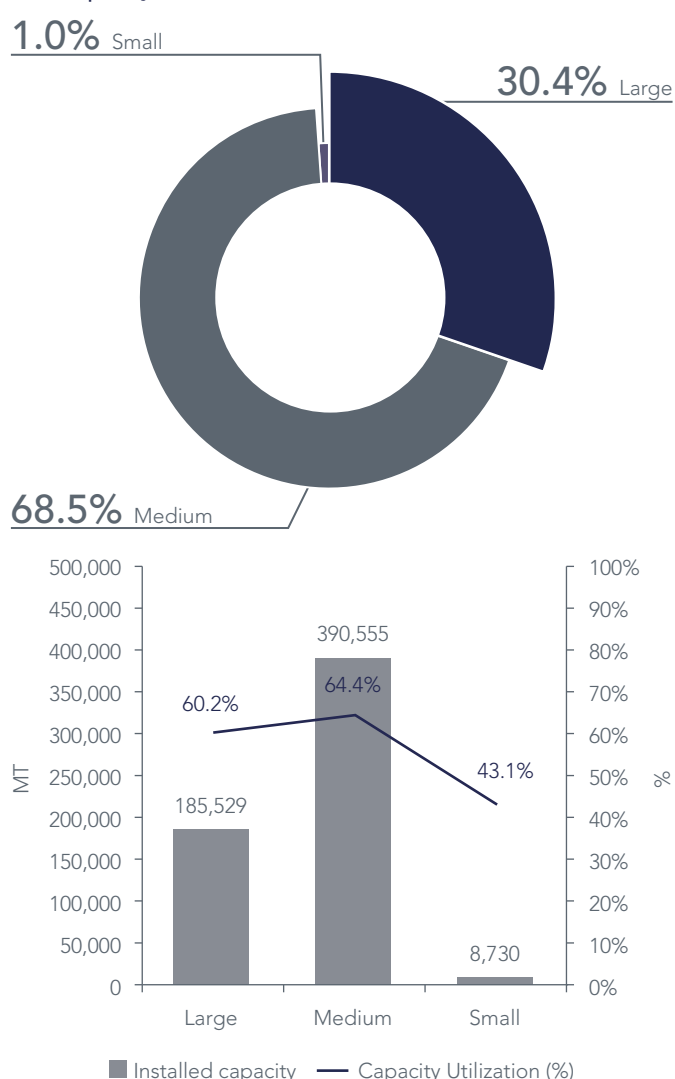
Qatar is home to 263 medium-sized firms, each having an average capacity greater than 380MT per annum and less than 12,000 MT per annum of steel fabrication per month. The medium-sized firms, collectively have 68.5% share of the sales by domestic players in volume terms. In case of medium-sized firms, on an average, 82.5% of the capacity is dedicated for structural steel fabrication works.

Large-sized Firms



Qatar's 10 leading firms form the group of large-sized firms. They collectively have 30.4% share³⁶ of the sales by domestic players in terms of quantity and concentrate on structural steel fabrication jobs (92.5% share of the capacity³⁷).

Chart 4. Qatar's Structural Steel Fabrication Market Structure and Capacity Utilization



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

^{34, 37} Primary Interviews

^{35, 36} Team Analysis

In terms of products and services, the leading players have well-developed capabilities and focus on a wide range of projects, such as industrial sheds, warehouses, stadia, metro rails and infrastructure. These also have in-house capabilities across the value chain of steel fabrication, such as designing, estimating and tendering, fabrication and related activities, and erection on site. In case of highly specialized projects, such as stadia that require specialized expertise in site erection, international contractors may be appointed for erection work.

Large-sized firms have an average capacity utilization rate of 60.2%, followed by medium-sized firms at 64.2%, with small firms lagging behind at 43.1%. The overall industry capacity utilization rate is 62.8%³⁸.

Table 10. Structural Steel Fabrication Market Structure Snapshot

Structural steel fabrication	Units	Large	Medium	Small	Total
Number of players	Number	10	263	194	467
Average monthly capacity per player	MT	1,671.4	150.0	12.5	
Average percentage share of capacity used for structural works	%	92.5%	82.5%	30.0%	
Structural fabrication average capacity p.a. per player	MT	18,553	1,485.0	45.0	
Capacity per category – structural works	MT	185,529	390,555	8,730	584,814
Market share	%	30.4%	68.5%	1.0%	100%
Sales	MT	111,737	251,502	3,760	366,999
Capacity utilisation	%	60.2%	64.4%	43.1%	62.8%

Source: Team Analysis, Primary interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

2.1.2.2. Profiling of Key Domestic Players

Profiling of key players in the market has been provided below.

Table 11. Structural Steel Fabrication: Key Domestic Players

Company	Group	Year of Establishment	Key Products/Projects	Installed Capacity (MT per annum)
SOLB26	Al Misnad Group	2007	<ul style="list-style-type: none"> • Stadia • Commercial and multi-story 	42,000
Eversendai	Qatari Investors Group	2006	<ul style="list-style-type: none"> • Turnkey contracts for high-rise buildings • Oil and Gas • Large industrial plants • Power plants 	24,000
Frijns Qatar	Al Faisal Group	2009	<ul style="list-style-type: none"> • Metro rail, airport, industrial projects and sheds • Commercial projects 	20,400
HBK	HBK Contracting Company W.L.L.	1970	<ul style="list-style-type: none"> • Framework for bridges • Fabrication for metro rail • Buildings, infrastructure and factory sheds • Gates, grill, doors, shutter, windows and fencing grill 	18,000
Gulf Steel	Salam International Investments Limited	1989	<ul style="list-style-type: none"> • Structural Steel Fabrication for metro rail, stadium, airport, industrial, commercial and architectural works 	12,000

³⁸ Team Analysis

Company	Group	Year of Establishment	Key Products/Projects	Installed Capacity (MT per annum)
Al Wadi	Equipment Rental Trading Company	1971	<ul style="list-style-type: none"> • Steel building • Canopies • Parameters • Car sheds • Fences • Handrail • PEB 	12,000
IronMount	Grand Mart Group	2012	<ul style="list-style-type: none"> • High-rise buildings • Oil and Gas • Aviation • Industrial projects • Warehouses and showroom • Commercial steel bridges 	12,000
Qatar Indo Fab	SASCO Group	2006	<ul style="list-style-type: none"> • Beams and Columns • Bridges • Tanks • Gratings • Equipment parts 	12,000
Steel Master	NA	2011	<ul style="list-style-type: none"> • Hot-rolled steel structures • Warehouses shades • Staircase • Gates, grills, handrail, cladding, hangers • Erection of structural steel works 	6,000
Steel Engineering Technology	NA	2013	<ul style="list-style-type: none"> • Steel buildings • PEBs • Pipe racks • Warehouses 	6,000
Leo Steel	NA	1990	<ul style="list-style-type: none"> • Airport extension • Railway and stadium • Roofing works, • Various steel doors and windows 	3,600
Doha Quick Space	NA	2006	<ul style="list-style-type: none"> • Car shades • Hangers, fencing, entrance cover • Canopy 	1,500

2.1.2.3. Business Model Analysis

Given the low entry barriers, widespread application of steel and large market size, structural steel fabrication has been an attractive sector for Qatari entrepreneurs. With several firms operating in the market and each targeting the same project, competition to win contracts is intense. These factors have shaped the business model of several leading civil contractors in Qatar.

Success in any industrial venture requires confluence of important parameters, such as (a) access to markets, (b) operational expertise, (c) access to funds, and (d) access to raw material.

Leading firms such as Eversendai Qatar and Frijns Qatar are a result of the joint ventures between international steel fabrication contractors and established Qatari business groups. This combines all of the above success factors — chief among them being winning contracts i.e., access to markets.

Primary interviews with fabricators have indicated that leading civil contractors prefer to award a major portion of the steel fabrication contracts to in-house steel fabrication units or to affiliated and related entities. Most large-sized and medium-sized firms have strategic linkages with established civil contractors in the form of holding-subsidiary relationship by the virtue of being a sister concern.

2.1.2.4. Domestic Production Competitiveness

Access to inexpensive raw material and to large market underlines the profitability and feasibility of any industrial venture. The key factors that influence the competitiveness of domestic production of structural steel fabrication units include raw material, labor, market size and the impact of competition.

Raw Material: Qatar does not have domestic production of raw material, such as steel plates, sheets and heavy sections. The domestic raw material production capacity is underdeveloped, limited to small sections (less than 80mm). Hence, all structural steel fabrication units in Qatar depend on imports to meet their raw material needs.

Our primary research indicates that raw material is procured from countries such as China, India, Saudi Arabia, Turkey and the UAE. Expensive raw material significantly impacts the cost of domestically produced finished goods.

High Operational Expenses: Our primary interviews indicate that operational costs are significantly higher in Qatar than in nations exporting to Qatar, i.e., China, India, the UAE, Turkey, etc. This adversely affects the price competitiveness of domestic production. Operational expenses are affected by high rent for accommodation that drives the salaries, and the rent for non-residential spaces increases the fixed expenses.

Time to Market: According to industry players, procuring raw material is time consuming, which leaves very little time to

fabricate and deliver finished products to customers. Due to this, raw material inventory quantity requirement increases. This increases the short-term interest payments, which adversely affect price competitiveness. Chinese imports reach Qatar in 25 to 45 days; the same time is required by steel fabrication units to locally produce finished goods.

Number of Players: Due to the fragmented nature of the market and the large number of players (467 players), steel fabrication market in Qatar is characterized by fierce competition and price sensitivity. Prices for all types of players, such as large, medium and small, vary based on the type of project, design and level of complexity. Large players handle complex projects that require special skills, capabilities and equipment. As compared to them, the small- and medium-sized players focus on project involving less complexity.

2.1.3. Trade Analysis

2.1.3.1. Historical Trade Analysis

The analysis of historical import data indicates that imports increased from 46,668MT in 2001 to 297,878MT in 2008, indicating a CAGR of 30.3%. In value terms, the imports grew at a CAGR of 43.2% from QAR180mn in 2001 to QAR2,225mn in 2008. Thereon, imports decreased due to economic slowdown of 2009. The imports have reduced from 152,217MT (QAR1,083mn) in 2010 to 76,349MT (QAR409mn) in 2015.

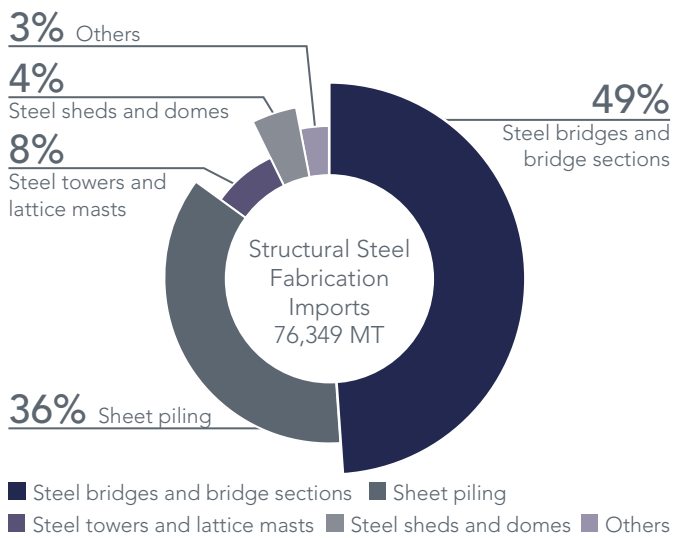
Chart 5. Qatar's Structural Steel Fabrication Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Structural steel fabricated products imported by Qatar in 2015 include bridges and bridge sections (49%), sheet piling (36%), steel towers and lattice masts (8%) and steel sheds and domes (4%)

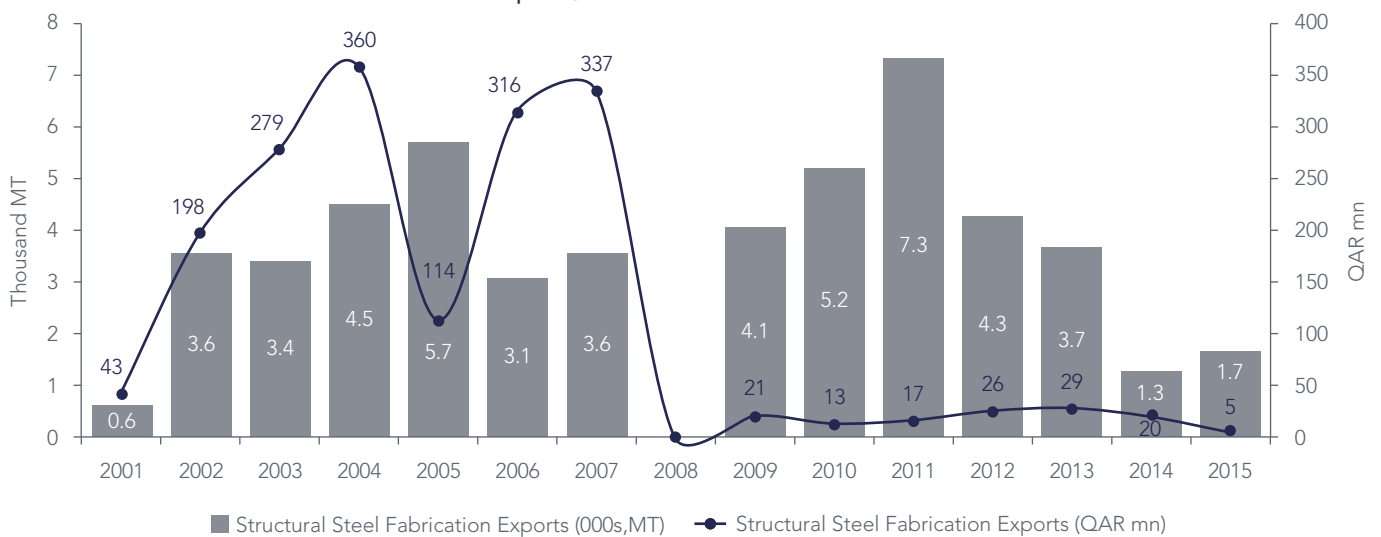
Chart 6. Structural Steel Fabrication Imports by Products, 2015



Source: ITC Trademap, Team Analysis

The analysis of historical export data³⁹ indicates that exports form a very small segment as compared to the domestic market. Export volumes increased from 613MT in 2001 to 1,274MT in 2015, indicating a CAGR of 7.4%.

Chart 7. Qatar's Structural Steel Fabrication Exports, 2001 to 2015

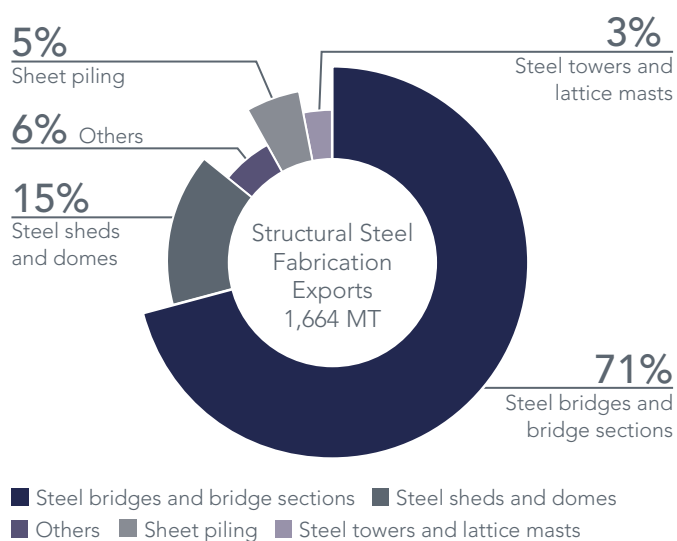


Source: ITC Trademap, Team Analysis

³⁹ ITC Trademap

Export segmentation: Key structural steel products exported from Qatar include bridges and bridge sections that accounts for 71% share of exports, followed by steel sheds and domes (15%), sheet piling (5%), steel towers and lattice masts (3%).

Chart 8. Structural Steel Fabrication Exports by Products, 2015



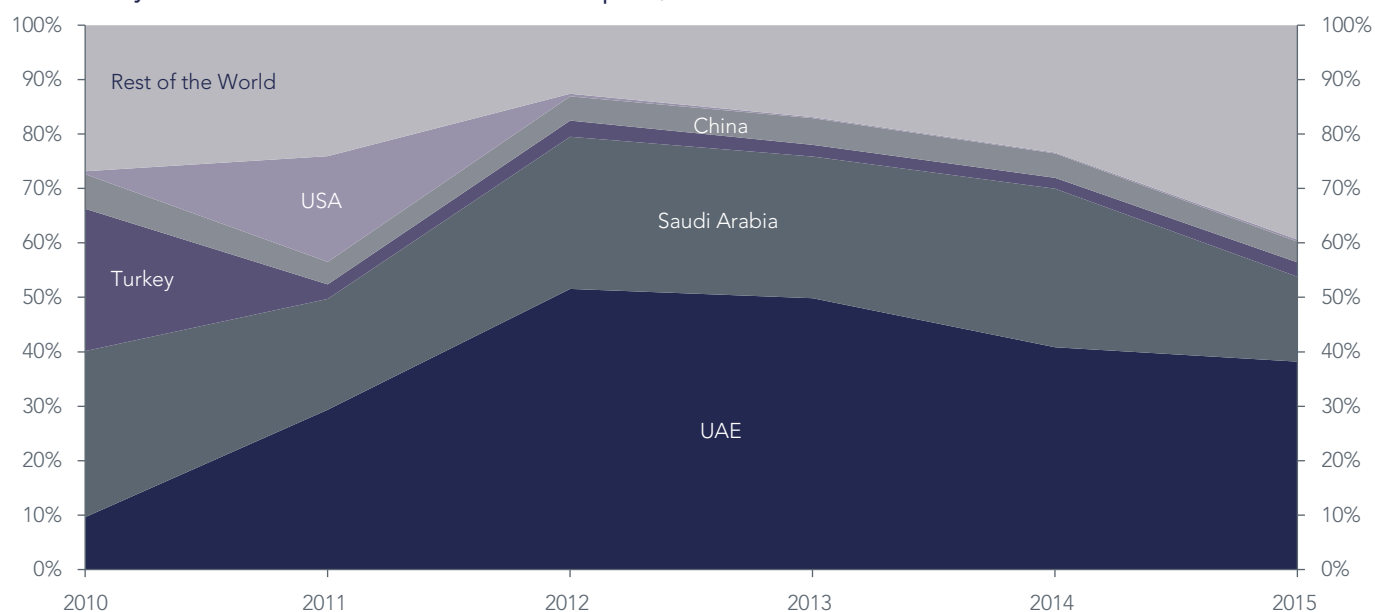
Source: ITC Trademap, Team Analysis



2.1.3.2. Trade by Source and Destination

Imports: The analysis of structural steel fabricated products imports⁴⁰ amounting to 661,806MT from 2010 to 2015 indicates that the UAE (32%), Saudi Arabia (26%), Turkey (9%) and China (5%) are the major sources of structural steel imports.

Chart 9. Key Sources of Structural Steel Fabrication Imports, 2010 to 2015



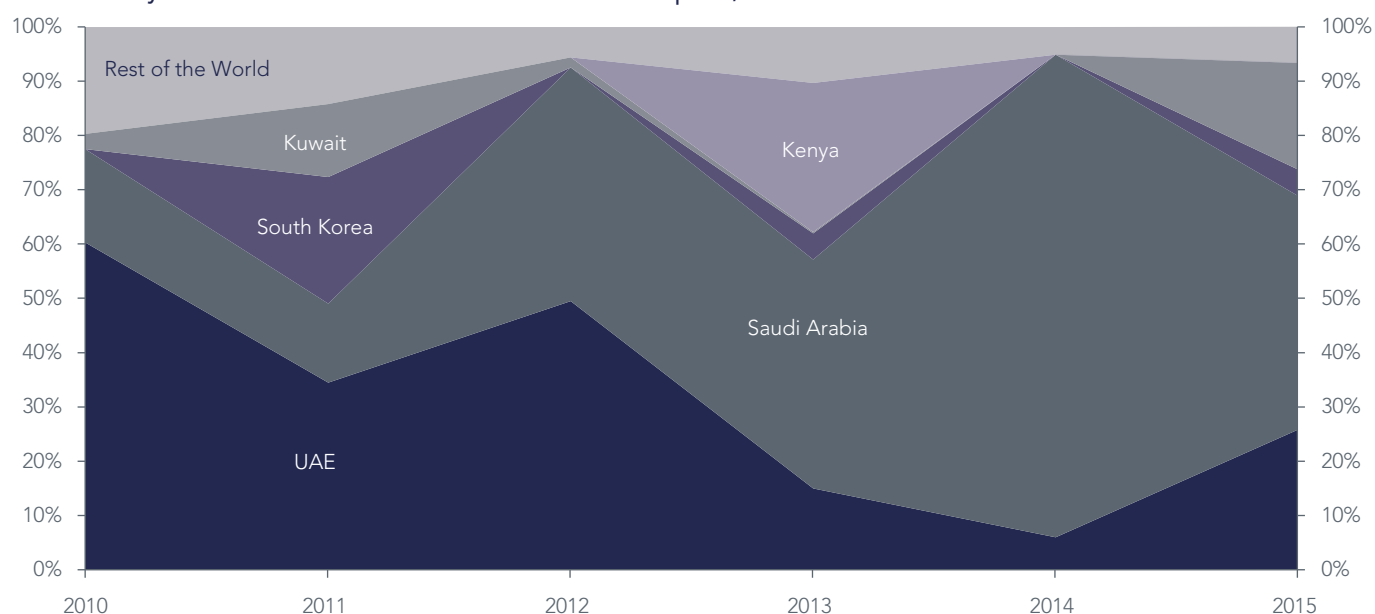
Source: ITC Trademap, Team Analysis

⁴⁰ ITC Trademap

The area graph shown above indicates that the share of top five countries reduced from 87.4% in 2012 to 60.6% in 2015. The increasing share of the rest of the world since 2012 indicates that Qatar-based importers are increasingly looking at newer sources for importing structural steel fabrication products. Key sources of imports that have dominated across past six years are the UAE and Saudi Arabia.

Exports: The analysis of structural steel fabricated product exports⁴¹ from Qatar amounting to 23,416MT from 2010 to 2015 indicates that the UAE (38%), Saudi Arabia (31%), Korea (8%) and Kuwait (7%) are the major destinations for structural steel exports.

Chart 10. Key Destinations for Structural Steel Fabrication Exports, 2010 to 2015



Source: ITC Trademap, Team Analysis

The area graph shown above indicates that the share of top five countries increased from 80.1% in 2010 to 93.0% in 2015. The small quantity of structural steel fabrication products that Qatar exports is targeted toward nearby countries, such as the UAE, Saudi Arabia and Kuwait. During 2010 to 2015, the share of the UAE decreased, while that for Saudi Arabia increased consistently.

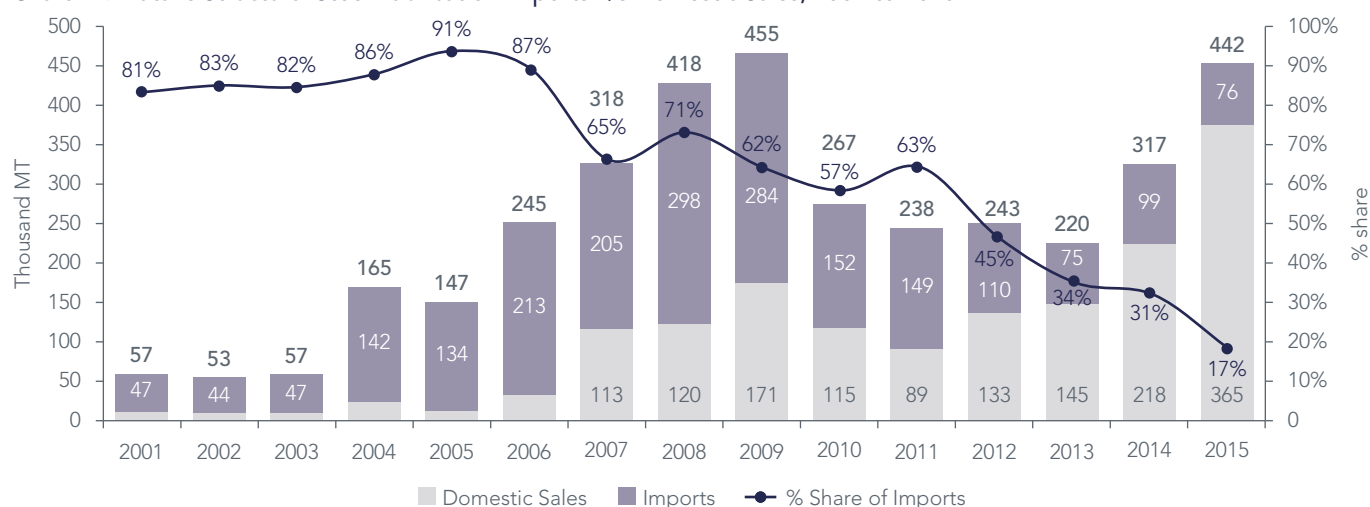


⁴¹ ITC Trademap

2.1.3.3. Share of Imports in Domestic Consumption

Between 2001 and 2006, about 81% to 91% of Qatar's steel fabrication requirements, in quantity terms, were met by imports. On the back of rapid market growth during 2003 and 2008, the widening demand-supply gap during this period drove the establishment of new domestic units. The share⁴² of imports in consumption fell steadily from 91% in 2005 to 17% in 2015.

Chart 11. Qatar's Structural Steel Fabrication Imports v/s Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

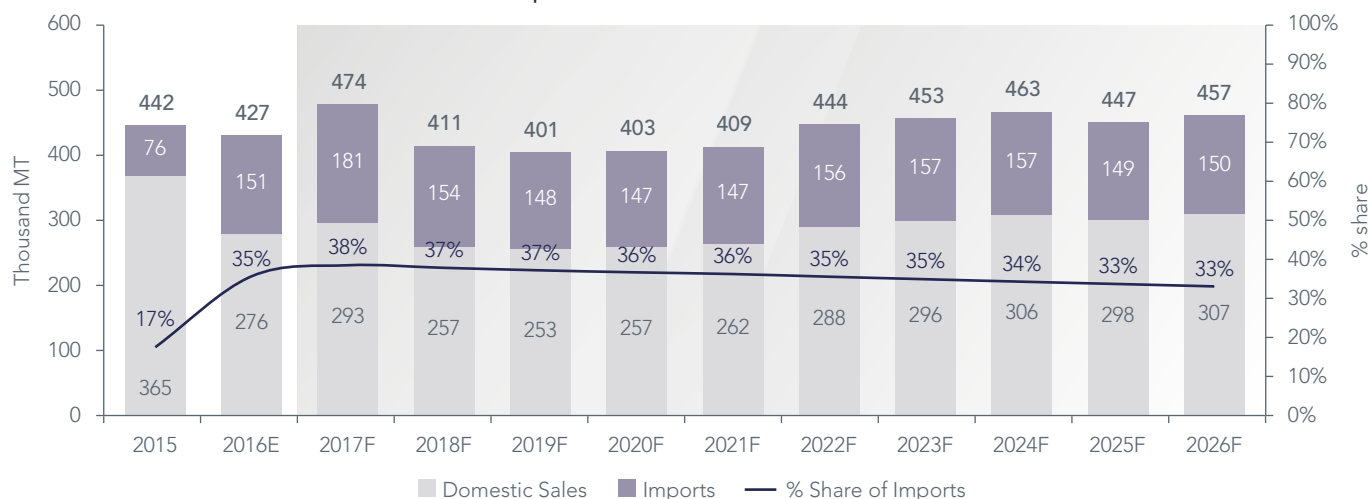
2.1.3.4. Assessment of Export Opportunities

Primary interviews indicate that due to high cost of operations, Qatar's production is not cost competitive and hence, steel fabrication units do not consider exports as an opportunity. Exports are most likely to be limited to rare opportunities where Qatari civil contractors win international projects and plan to source from in-house Qatar-based steel fabrication units or multinational players. For example, Eversendai may source from its Qatar units to meet the demand arising at its steel fabrication units in other countries.

2.1.3.5. Trade Forecast

Imports: The import forecast of structural steel fabrication indicates that about 33% to 38% of the market requirements (in quantity terms) would be met by imports. Primary interviews indicate that imports from Saudi Arabia, the UAE, China and Turkey are about 25% to 40% cheaper than domestic production. Import quantity is expected to reach 149,619MT in 2026⁴³.

Chart 12. Qatar's Structural Steel Fabrication Import Forecast, 2015 to 2026



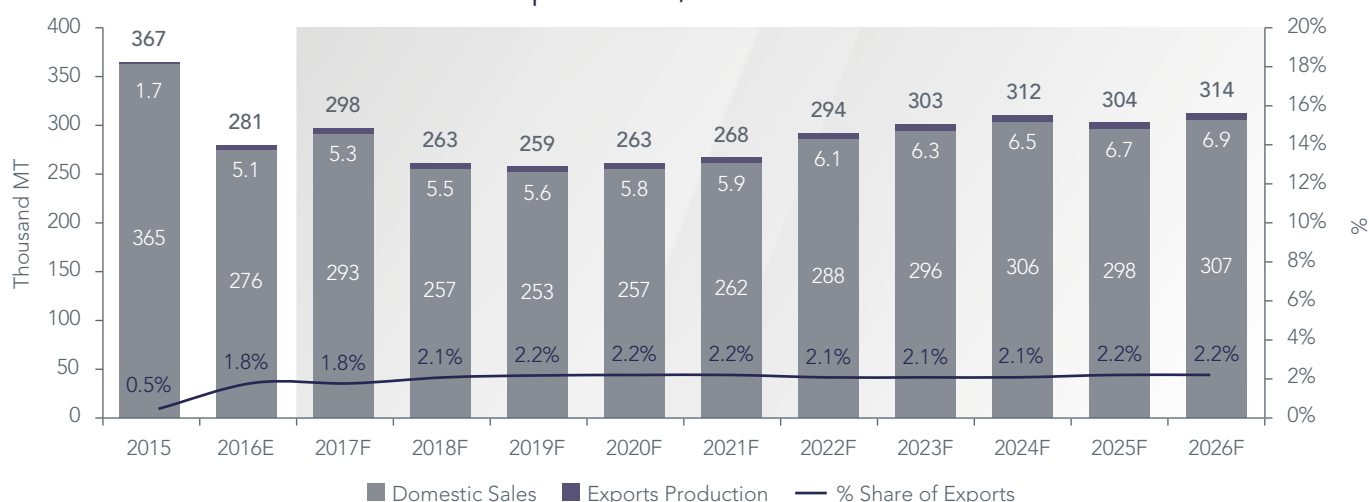
Source: Team Analysis, ITC Trademap

^{42, 43} Team Analysis

Exports: The analysis of recent trade data⁴⁴ and domestic production estimates indicate that 2.15% of domestic production has been exported from Qatar. The ten-year export forecast of structural steel fabrication indicates that exports may offer less opportunity. Approximately 1.8 to 2.2% of the domestic production (in quantity terms) can be exported⁴⁵ during 2016 and 2026.

Primary interviews indicate that Qatar's production is not cost competitive and hence, steel fabrication units do not consider exports an opportunity. Exports are likely to range from 5,053MT in 2016 to 6,911MT in 2026.

Chart 13. Qatar's Structural Steel Fabrication Export Forecast, 2014 to 2026

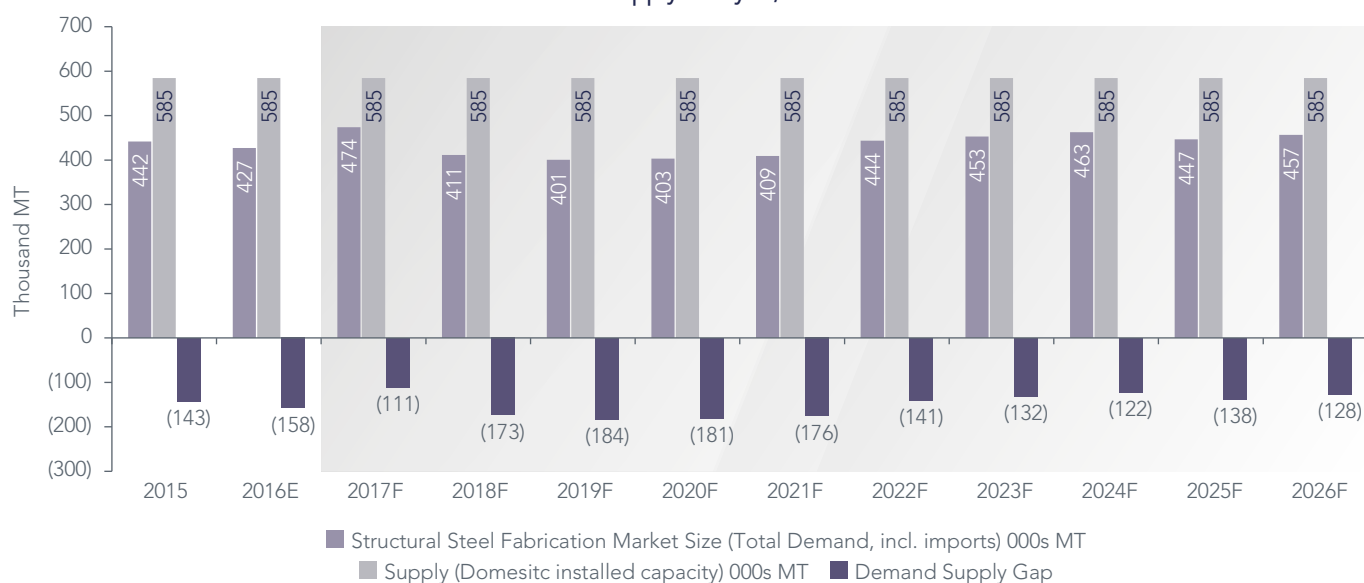


Source: Team Analysis, ITC Trademap

2.1.4. Demand-Supply Analysis

Considering the fact that there are 467 firms⁴⁶ operating in the market, the installed capacity is 584,814MT per annum, which does not include assumptions for new players having plans to enter the market that have not been announced so far. Comparing with the market size estimates (incl. imports projection), the demand-supply gap points toward an oversupply of 184,043MT in 2019 that is expected to reduce to 128,073MT in 2026⁴⁷.

Chart 14. Qatar's Structural Steel Fabrication Demand-Supply Analysis, 2014 to 2026



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015, ITC Trademap

⁴⁴ ITC Trademap

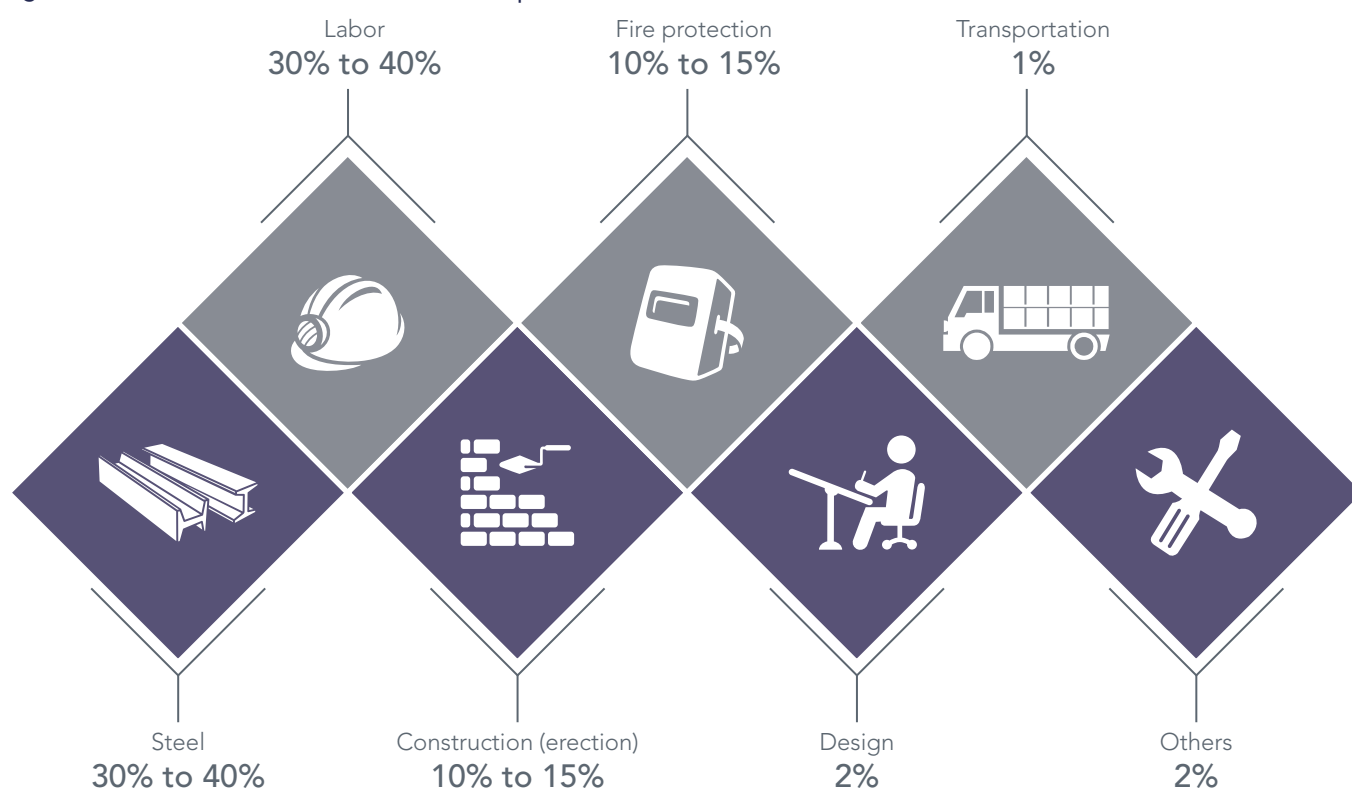
^{45, 47} Team Analysis

⁴⁶ MDPS

2.1.5. Pricing Analysis

The key factors affecting product pricing are raw material costs and labor costs. These collectively account for an average of 70% of the production costs. Domestic production of raw material in Qatar is extremely limited and hence, steel fabrication units are heavily dependent on imports for sourcing raw material or purchasing it from local traders and distributors. Thereby, raw material prices, which are affected by global macro level trends, drive the selling price of finished goods. The key components of production costs are provided in the adjoining table. Profits and contingency are assumed at additional 10% to 15% and 5% to 10%, respectively, to arrive at finished goods pricing.

Figure 3: Structural Steel Fabrication Cost Component



Source: Primary Interviews

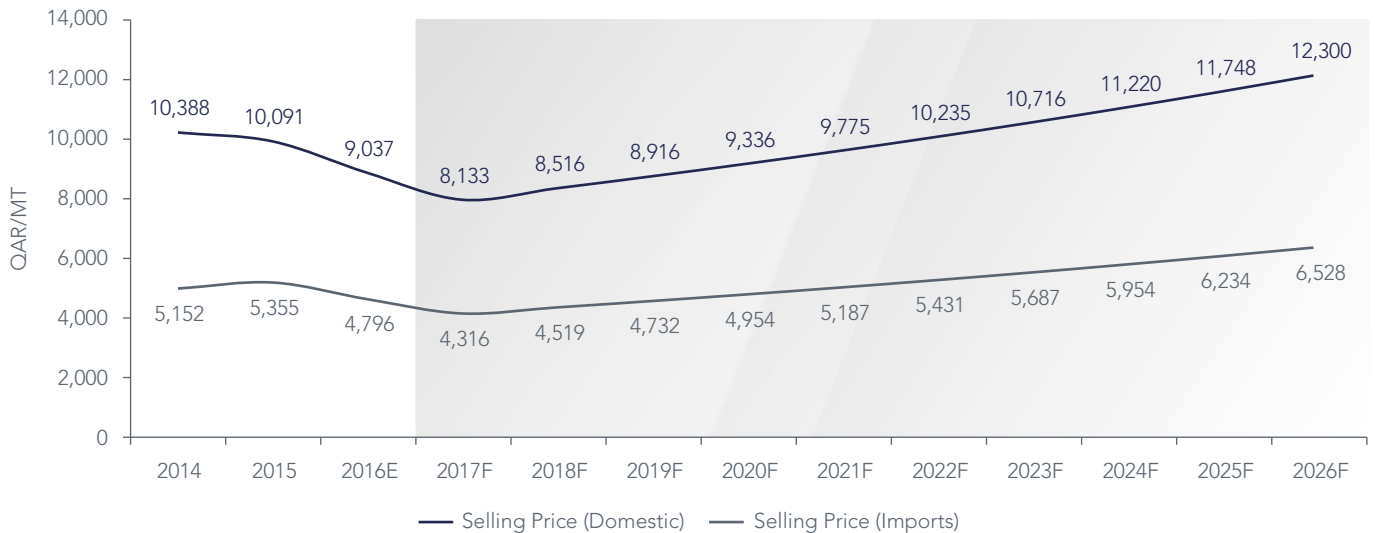
Steel Fabrication: Selling prices for steel fabrication are quoted on an MT basis and vary as per the design, level of complexity and type of paint (standard paint, cementitious paint, intumescent paint). Currently, the 2016 domestic prices for structural steel fabrication are in the following range:

- Steel fabrication (with standard paint): QAR5,500 to 7,000/MT
- Steel fabrication (with cementitious paint): QAR8,000 to 9,000/MT
- Steel fabrication (with intumescent paint): QAR13,000 to 15,000/MT

Trends in selling price are affected by raw material price. The average domestic prices and average import prices for structural steel fabrication in Qatar have been forecast considering the trends in the iron ore prices (2015 to 2026) forecast by the World Bank.

Average domestic prices for structural steel fabrication are expected to range from QAR9,037 per MT in 2016 to QAR12,300 per MT in 2026, implying a CAGR of 3.13%. Average import prices for structural steel fabrication are expected to range from QAR4,796 per MT in 2016 to QAR6,528 per MT in 2026.

Chart 15. Qatar's Structural Steel Fabrication Selling Prices Forecast, 2014 to 2026



Source: Team Analysis, Primary Interviews

2.1.6. Regulatory Analysis

Qatar Construction Specifications (QCS) 2014: As steel fabrication products are used in the construction sector, their production, installation and usage are mainly regulated as per the following sections of QCS 2014.

a) QCS 2014 Section 16: Structural Steelworks

This section has general instructions and regulations related to materials, drawing, fabrication, welding, bolting, accuracy of fabrication, erection, accuracy of erected steel work and protected treatment.

b) QCS 2014 Section 17: Metal Work

This section has general instructions and regulations related to material classification, metal doors and windows, architectural metalwork, light metal support, cladding support and workmanship.

In addition to the above, steel fabrication units need to be familiar with other relevant sections of QCS that regulate construction activities having an interface with steel fabrication products. These sections include section 13 (Masonry), section 14 (Roofing), section 4 (Foundation and retaining structures) and section 5 (Concrete).

Ministry of Environment: Steel fabrication units need to be approved by the Ministry of Environment.

Civil Defense Department (Ministry of Interior): All building materials products need an approval from the Civil Defense Department (Ministry of Interior) as per Emiri Decree No. 9/2012. Steel fabrication units have to comply with applicable fire safety norms.

ISO Certification: Obtaining ISO certifications (Quality 9001, OHSAS 18001 and Environment 14,001) are vital for tendering purposes.

Apart from the above mentioned conditions, all prospective entrepreneurs need to follow applicable laws on company registration, industrial license, obtaining land and building permissions to set up a steel fabrication facility in Qatar.

2.1.7. SWOT Analysis and Michael Porter’s Five Forces Analysis

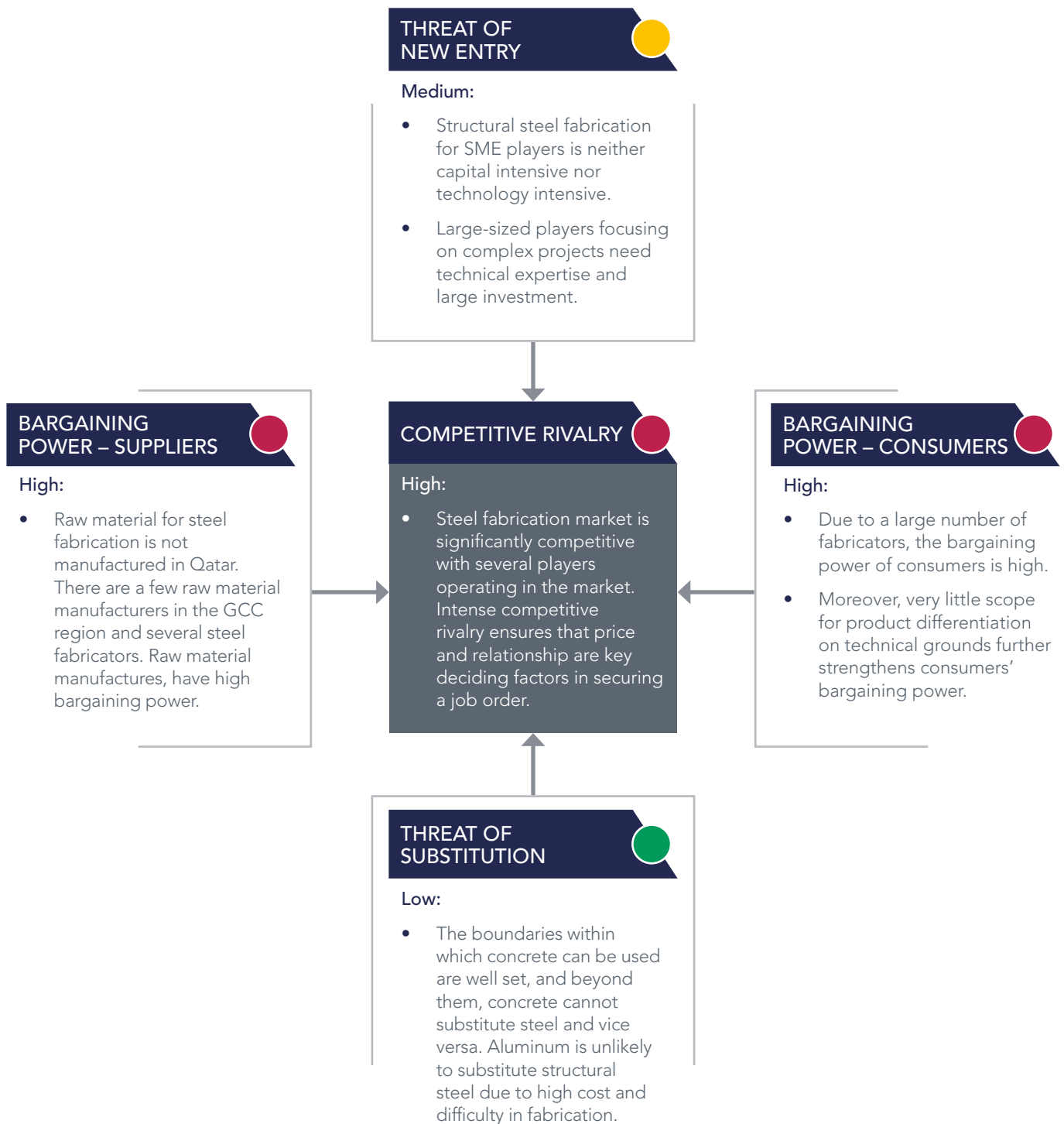
2.1.7.1. SWOT Analysis

Figure 4: Structural steel Fabrication SWOT Analysis



2.1.7.2. Michael Porter's Five Forces Analysis

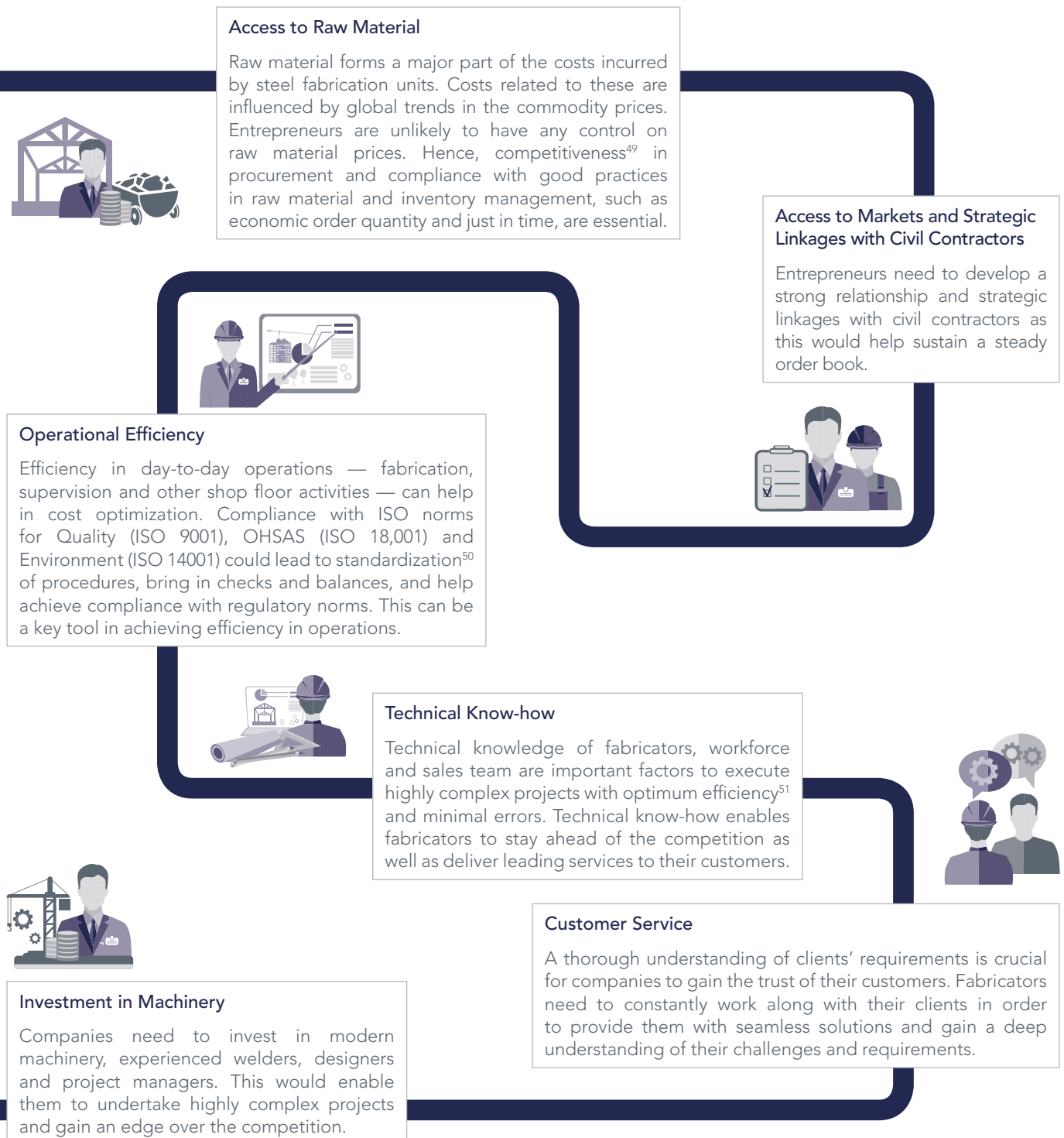
Figure 5: Michael Porter's Five Forces Model (Structural Steel Fabrication)



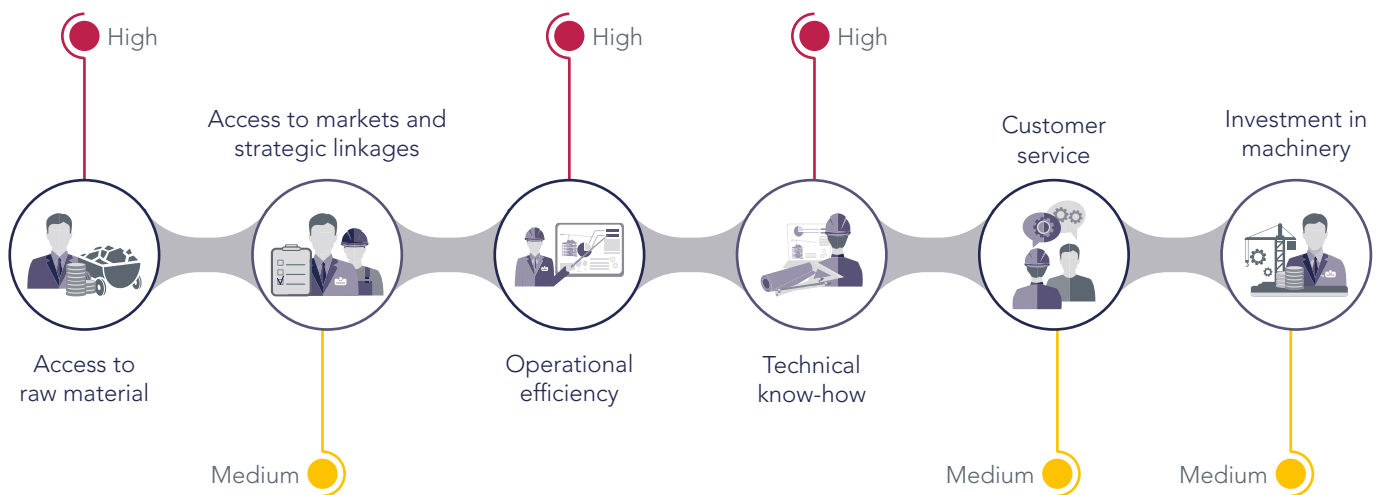
2.2. Critical Success Factors

Critical Success Factors include the following:

Figure 6: Critical Success Factors - Structural Steel Fabrication



^{49, 50, 51} Primary Interviews



2.3. Outlook

Going ahead, Qatar market is expected to offer sizable opportunities for new units in the structural steel fabrication market that would continue to remain a major portion (53.1%) of the structural metal products sector. In terms of domestic production value, structural steel fabrication is likely to constitute 56.7% of the overall structural metal products sector.

In the medium- to long-term, large scale industrial developments such as SEZs — promoted by Manateq, metro rail, stadia, industrial projects and upcoming real estate projects — would drive the demand. The market size is estimated to be 427,257MT (QAR3,247mn) in 2016. On the back of strong demand drivers, the market is expected to grow to reach 456,740MT (QAR4,804mn) in 2026.

Large market size means an opportunity⁵² for new players to tap into 2,948MT worth of average incremental business every year, from 2017 to 2026. This implies that subject to competitive challenges, opportunities exist for two mid-sized players (1,800 MT p.a. capacity running at 80% utilization) to enter the market every year.

In terms of challenges, the market is likely to remain significantly competitive and price sensitive. Significant dependence on imports for procurement of raw material and high operational expenses (salaries, rent, etc.) as compared to those in other countries such as the UAE and Saudi Arabia would limit export potential to rare opportunities of up to 2.2% of the domestic production for structural steel fabrication. Imports are likely to remain cheaper as compared to domestic production, and further heighten the challenges.

In the medium- to long-term, the strengths and opportunities outweigh the weaknesses and threats due to large market size, upcoming projects pipeline in Qatar and opportunities for civil contractors to backward integrate.

⁵² Team Analysis

3. PRE-ENGINEERED BUILDINGS

3.1. Overview of PEBs

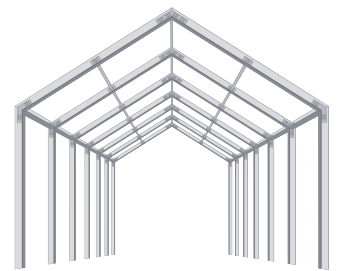
PEB is a metal shell utilizing three distinct product categories, namely (1) built-up 'I' shaped primary structural steel framing members (columns and rafters); (2) cold-formed 'Z'- and 'C'-shaped secondary structural steel members (roof purlins, eave struts and wall girts); and, (3) corrugated sheets made of steel (roof and wall panels).

3.1.1. Components of PEBs

Figure 7: Key Components of PEBs

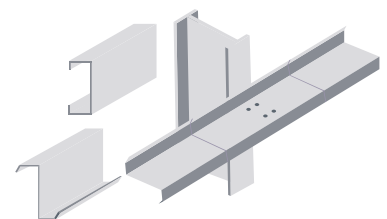
Primary Structure (columns and rafters)

- Primary structure is the most important part of PEBs. It bears the major load of the building
- Assembled columns and rafters make the frame of the building. All other parts of the building are fixed on it
- This structure is designed using advanced software, such as STAAD PRO and Tekla.



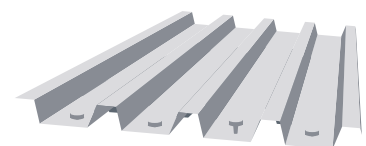
Secondary Structures ('C' and 'Z' purlin frames, girts and eave struts)

- Purlin, girts, eave struts, etc., are secondary members of structural framing
- Purlins act as struts that help in resisting wind and earthquake loads, and increase the frame capacity by providing lateral bracing to the main frame.



Decking Sheets ('G' panel)

- Decking sheets are used for flooring. For intermediate floors, a metal decking sheet is fixed to purlins and concrete is poured over it
- Deep-ribbed type 'G' panel is used as deck paneling for mezzanines and floor systems
- They are available in 0.7mm pre-galvanized coating on steel.



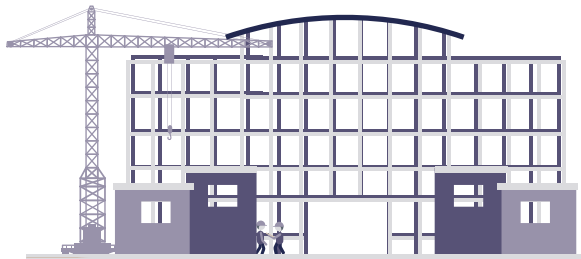
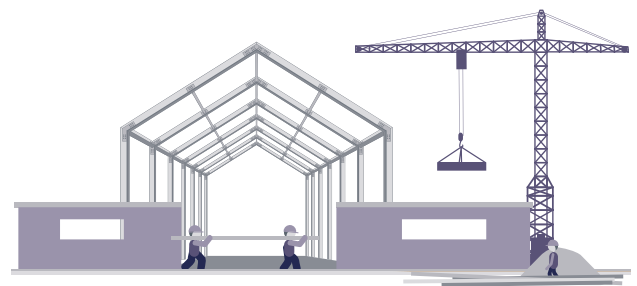


3.1.2. Applications of PEBs

Figure 8: Applications of PEBs

Factories, Industrial Buildings and Warehouses

- PEB factories, industrial buildings and warehouses consist of primary and secondary steel frames
- PEBs enable quicker and economical creation of industrial buildings, factory sheds and warehousing infrastructure
- They are ideal for factory sheds, buildings and warehouses where the intermediate columns are avoided to enable free movement of goods and machinery
- PEBs are fabricated to an end user's requirement in a factory and erected at site, which saves time.

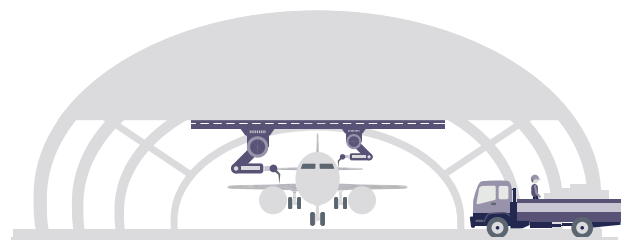


Commercial Buildings (showroom, exhibition hall) and Shopping Malls

- PEBs are ideal for showrooms, airports, exhibition halls, etc., due to their esthetic flexibility
- They are ideal for buildings in city area where land cost is too high, since they use lesser footprint area than RCC buildings
- Shopping malls tend to undergo expansion over a period of time; PEBs enable expansion based on the current structure.

Others (aircraft hangars, indoor stadiums, platform shelters, etc.)

- Aircraft hangars with integrated hangar and hangar door are beneficial since the building header is structurally designed to carry the door system, roof system and their respective reactions and loadings
- PEBs are ideal for buildings that need to be relocated to other places.



3.1.3. Benefits of PEBs vs Conventional Steel Buildings

Figure 9: Benefits of PEBs⁵³ vs Conventional Steel Buildings

	PEBs	Conventional Steel Buildings
	Structure <ul style="list-style-type: none"> • PEB structures utilize steel efficiently with different types of columns and rafters • Weight is reduced by 30% through the efficient use of steel • Secondary structures are made with lightweight roll-forming 'Z'- or 'C'-shaped purlins 	<ul style="list-style-type: none"> • Primary steel structures have constant cross sections, regardless of the varying magnitude of local stresses along the member length • Weight is high due to a high safety factor and the usage of heavier steel sections • Secondary structures are made with standard hot-rolled sections, which are relatively more heavier
	Design <ul style="list-style-type: none"> • Design is esthetically appealing • Specialized computer analysis design programs optimize the materials required • Drafting is computerized using standard details to minimize the use of project custom details 	<ul style="list-style-type: none"> • Special esthetic designs for steel buildings have to be specially modeled • It is designed from the scratch, and requires substantial engineering and detailing work by the consultant with fewer design aids
	Delivery <ul style="list-style-type: none"> • Average delivery time is 6 to 8 weeks • Erection process is faster and much easier with very less requirement for equipment 	<ul style="list-style-type: none"> • Average delivery time is 22 to 28 weeks • Erection process is slow; it requires extensive use of field labor and heavy equipment
	Foundation <ul style="list-style-type: none"> • It has a simple design, is easy to construct and is lightweight due to lower deadweight of the super structure 	<ul style="list-style-type: none"> • It requires extensive, heavy foundation on account of higher deadweight of the super structure (i.e., heavy beams)
	Price <ul style="list-style-type: none"> • The initial cost of PEB steel buildings is lower (cost per sqm is about 30% less than the conventional structures) and delivery is faster 	<ul style="list-style-type: none"> • Special design and features need to be developed for each project at higher costs
	Performance <ul style="list-style-type: none"> • All components are specified and designed specially to act together as a system for maximum efficiency, precise fit and peak performance in the field 	<ul style="list-style-type: none"> • Components are custom designed for a specific application on a specific job. Design and detailing errors are possible while assembling the diverse components into unique buildings

⁵³ PEBSteel

3.2. Qatar PEB Market Analysis

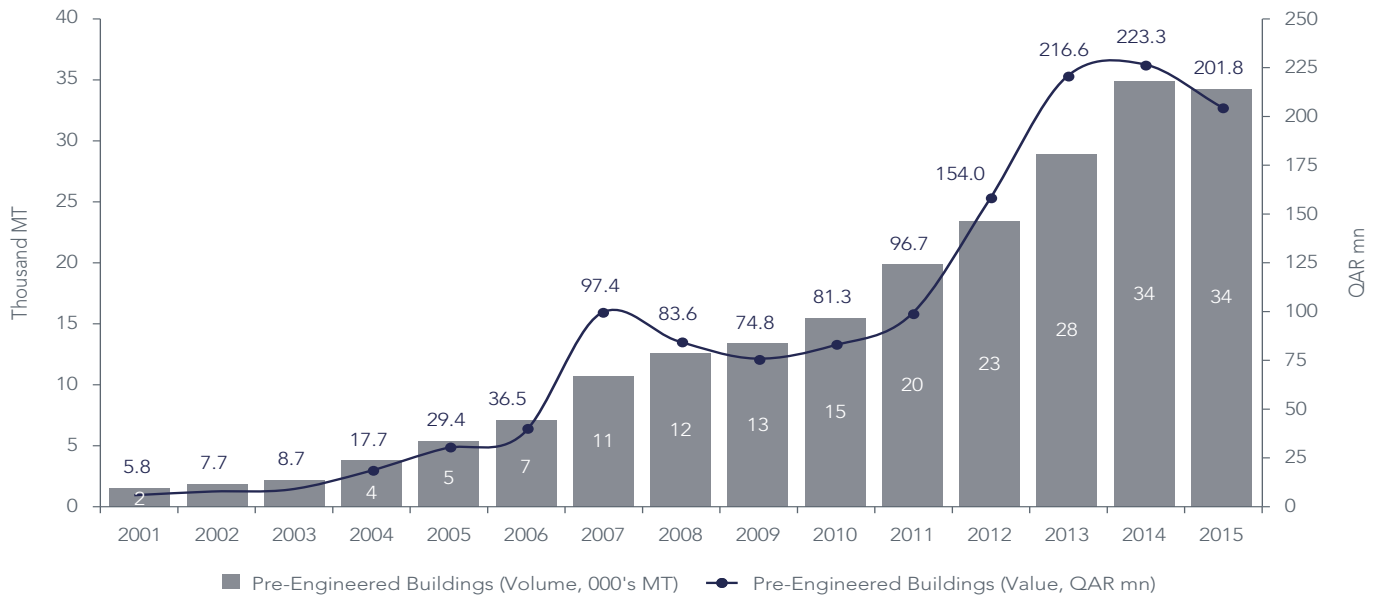
3.2.1. Demand-Side Analysis

3.2.1.1. Historical and Current Market Size

Qatar's market size for PEBs in terms of volume was estimated at 33,732MT and was valued at QAR201.8mn in 2015⁵⁴. The PEB market registered a steady growth in terms of volume since 2009, driven by the demand for manufacturing facilities and warehouses from the industrial and commercial segments. However, volatility in steel prices led to fluctuations in the market values between 2007 and 2015.

Between 2010 and 2015, the market grew at a Compound Annual Growth Rate (CAGR) of 17.2% in terms of volume and 19.9% in terms of value driven by the increased demand for PEBs from construction projects such as factory sheds for QDB's Jahez scheme, warehouses, airport expansion project, hangers, etc.

Chart 16. Qatar's PEB Demand, 2001 to 2015

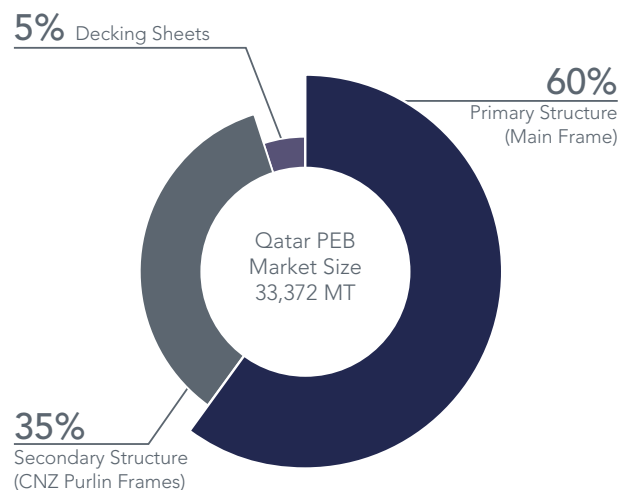


Source: Team Analysis, ITC Trademap, Primary Interviews

3.2.1.2. Market Size Segmentation by Products

Primary structures are the main load-bearing structures of PEBs that account for 60% share of the market. The key application areas of primary structures range from industrial, commercial, recreational and institutional segments. Secondary structures that consist of purlin, girts, eave struts, etc., account for 35% share of the market, followed by decking sheets that account for the balance 5% share.

Chart 17. PEB Market Segmentation, 2015



Source: Team Analysis, Primary Interviews

⁵⁴ Team Analysis

3.2.1.3. Demand Drivers

One of the major demand drivers for the PEB industry is the government's increased focus on economy diversification, by promoting the manufacturing sector and SMEs, which would result in increased construction of factory sheds, industrial buildings, etc., in Qatar. Moreover, Manateq's special economic zones (SEZs) would provide a boost to set up factory sheds and industrial buildings, thus driving the demand for PEBs.

In addition, the increasing demand for modern warehousing is among the top demand drivers for PEB structures. The demand is expected to be driven by the logistics and retail sectors, which require large PEB structures such as warehouses and retail space. Further, demand from power plant structures, factory buildings, commercial buildings (offices and retail malls) and metro stations, etc., would increase the demand for PEBs.

Government's Increased Focus on Economy Diversification

Qatar's Government has a strong focus on developing the manufacturing sector, the downstream sector, as part of its goal of diversifying the economy that would enhance the private sector's contribution to GDP and would drive the demand for PEBs in the country.

3.2.1.4. Demand Forecast

The demand for PEBs in Qatar is forecast to reach 42,485MT in volume terms and QAR317.8mn in value terms in 2026⁵⁵. The PEB market size in volume is expected to witness an 8% decline in 2016 due to volatility in crude oil prices that resulted in stalling of certain industrial and infrastructure projects as the government tries to cut down expenses until crude oil prices stabilize. With the anticipated recovery in crude oil prices post 2016, the market is forecast to grow at a CAGR of 3.2% from 31,009MT in 2016 to reach 42,485MT until 2026.

Manateq's SEZs

Manateq is promoting three SEZs in Qatar. These are expected to give a boost to the manufacturing and industrial sectors. New industrial developments are expected to drive the demand for PEBs. Details related to the upcoming SEZs are as follows:

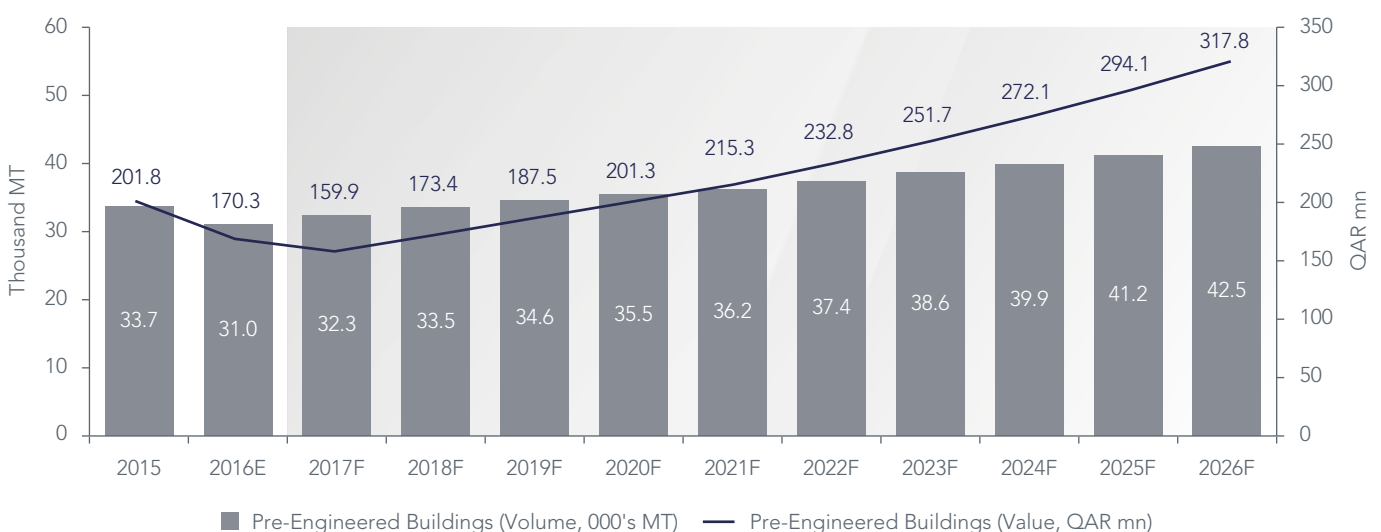
SEZ 1: Ras Bufontas; Location: adjacent to Hamad International Airport. Sectors: Healthcare and medical devices; aerospace and automotive; advanced technology; logistics; and business services.

SEZ 2: Um Alhoul; Location: adjacent to Hamad Port, next to the Mesaieed Industrial City.

Sectors: Marine industries; logistics; electrical and machinery; food and beverages; building materials, metals and materials; and, downstream petrochemicals.

SEZ 3: Al Karaana (which is Manateq's largest project and is expected to be launched in 2018). It is strategically located a halfway between Doha and Abu Sumra on the border of Saudi Arabia. Al Karaana would become the overland gateway to GCC markets.

Chart 18. Qatar's PEB Demand Forecast, 2014 to 2026



Source: Team Analysis, ITC Trademap, Primary Interviews

⁵⁵ Team Analysis

3.2.2. Supply-Side Analysis

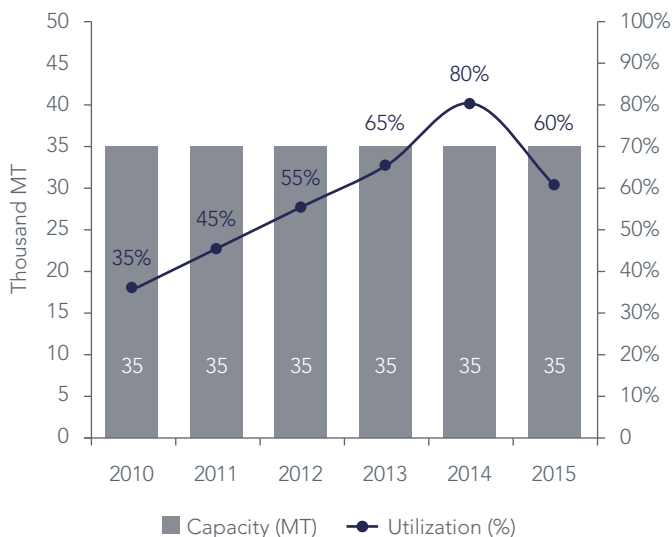
3.2.2.1. Market Structure

There are several players in Qatar that are engaged in the manufacturing of PEBs; however, there is only one player (BSI Steel based in Qatar with about 250 employees) that has a manufacturing facility dedicated entirely for PEBs. BSI Steel has a total production capacity of 20,000MT per annum and currently its utilization rate is at 60%. On account of growing demand for PEBs in Qatar, BSI's capacity utilization increased steadily from 35% in 2010 to 60% in 2015.

The other manufacturers include domestic steel fabrication firms that manufacture PEBs as part of their overall product portfolio. International players operating in Qatar serve the market mainly through imports from Kuwait, Turkey, the UAE, Saudi Arabia, China and India.

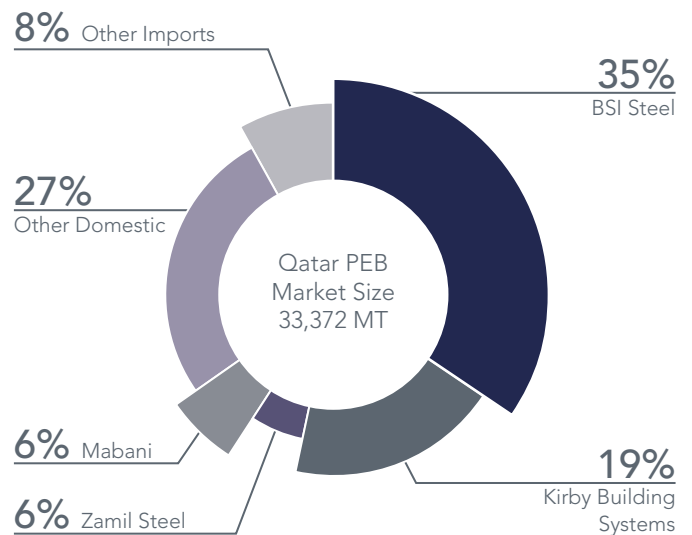
BSI Steel is the market leader with 35% share of the market followed by Kirby Building Systems with 19% share that serves the market through imports. Domestic steel fabricators, such as Al Wadi Steel and KBC Engineering, also manufacture PEBs as part of their product portfolio and account for 27% share of the market. Other players in the market, such as Zamil Steel and Mabani Steel, serve through imports from their manufacturing facilities in Saudi Arabia and the UAE.

Chart 19. Qatar's PEB Production Capacity and Utilization



Source: Team Analysis, Primary Interviews

Chart 20. Qatar's PEB Market Share of Key Players, 2015



Source: Team Analysis, Primary Interviews



3.2.2.2. Profiling of Key Domestic Players

BSI Steel: Established in 2006, it is the only organized player with a dedicated PEB manufacturing facility in Qatar. Its head office and plant are located in the New Industrial Area in Doha. Its facilities include a canteen, clinic, office space and an area of 9,000sqm plant facility, totaling up to 10,000sqm. BSI Steel is ISO 9001:2008 certified. It sells directly to customers (contractors). Key clients include companies from the construction, warehousing and oil and gas sectors.

Table 12. PEB: Key Domestic Players

Key Players	Year of Establishment	Product Portfolio	Installed capacity (MTPA)
BSI Steel	2006	<ul style="list-style-type: none"> • PEBs 	20,000
Al Wadi Contracting	1971	<ul style="list-style-type: none"> • PEBs • Structural steel works • Pre-fabricated buildings 	12,000
Steel Engineering Technology	2013	<ul style="list-style-type: none"> • PEBs • Structural steel works • Pre-fabricated buildings 	6,000
KBC Engineering	1987	<ul style="list-style-type: none"> • PEBs • Structural steel works • Aluminum fabrication 	-
Al Maher Contracting	2012	<ul style="list-style-type: none"> • PEBs • Pre-fabricated buildings 	-
Big Engineering Works	1996	<ul style="list-style-type: none"> • PEBs • Structural steel works • Pre-fabricated buildings 	-

3.2.2.3. Business Model Analysis

The manufacturing of PEB requires access to raw materials, such as steel plates, which are then fabricated according to the standard specifications. Design and detailing software (e.g., MBS Software) is used that incorporates building codes, applicable to the design and manufacturing of PEBs.

BSI Steel is the only organized player with a dedicated PEB manufacturing facility in Qatar. Prior to this, the market was mainly dependent on imports from neighboring GCC countries, such as the UAE, Saudi Arabia and Kuwait, which have the manufacturing base of leading PEB manufacturers.

Apart from BSI Steel, most of the players, such as Kirby Building Systems, Zamil Steel, Mabani Steel and Mammut Building Systems, are serving the market through imports. They mainly benefit from being industry leaders in the GCC market and also have access to raw materials at a lower price in the UAE and Saudi Arabia as compared to Qatar where the majority of the steel plates and sections are imported into the country. Being a local supplier, BSI Steel currently benefits from local expertise and access to major projects in Qatar. Its large-scale manufacturing facility, experience in the domestic market and quick turnaround time make it a preferred supplier for various industrial and commercial projects in Qatar. Construction companies are in full swing in order to complete their projects before the deadlines for the FIFA 2022, metro rail and SEZ, which make PEBs a preferred choice of structures for warehousing and factories for its quick construction ability.

Thus, having strategic linkages with construction companies, which can ensure a steady flow of contracts, as well as having well-equipped manufacturing facilities is a key requirement for any new entrepreneur intending to set up a PEB manufacturing unit.

3.2.2.4. Domestic Production Competitiveness

Access to inexpensive raw material and to large market underlines the profitability and feasibility of any industrial venture. Key factors that influence the competitiveness of domestic production of PEBs include raw material, labor, market size and impact of competition.

Raw Material: Qatar does not domestically produce raw materials, such as steel plates. The raw material production capacity is underdeveloped, limited to small sections (less than 80mm). Hence, PEB manufacturers in Qatar depend on imports to meet their raw material needs.

Our primary research indicates that the raw material is procured from China, India, Saudi Arabia, Turkey and the UAE. Expensive raw material significantly impacts the cost of domestically produced finished goods.

High Operational Expenses: Our primary interviews indicate that the operational costs are significantly higher in Qatar due to higher labor costs and rent as compared with the nations exporting to Qatar — Kuwait, the UAE, Saudi Arabia, India, China, Turkey, etc. This adversely affects the price competitiveness of the domestic production.

Time to Market: According to industry players, procuring raw material is time consuming, which leaves them with very little time to fabricate and deliver finished products to customers. Raw material inventory requirement increases since manufacturers either have to procure raw materials in advance that add to the inventory costs or they would have to purchase raw materials at current market rates, which may be higher than the quotations submitted for job works, adversely affecting their price competitiveness.

Number of Players: Due to the fragmented nature and the large number of players catering to the market though local production as well as imports, the PEB market in Qatar is characterized by fierce competition and price sensitivity.

⁵⁶ Company Websites

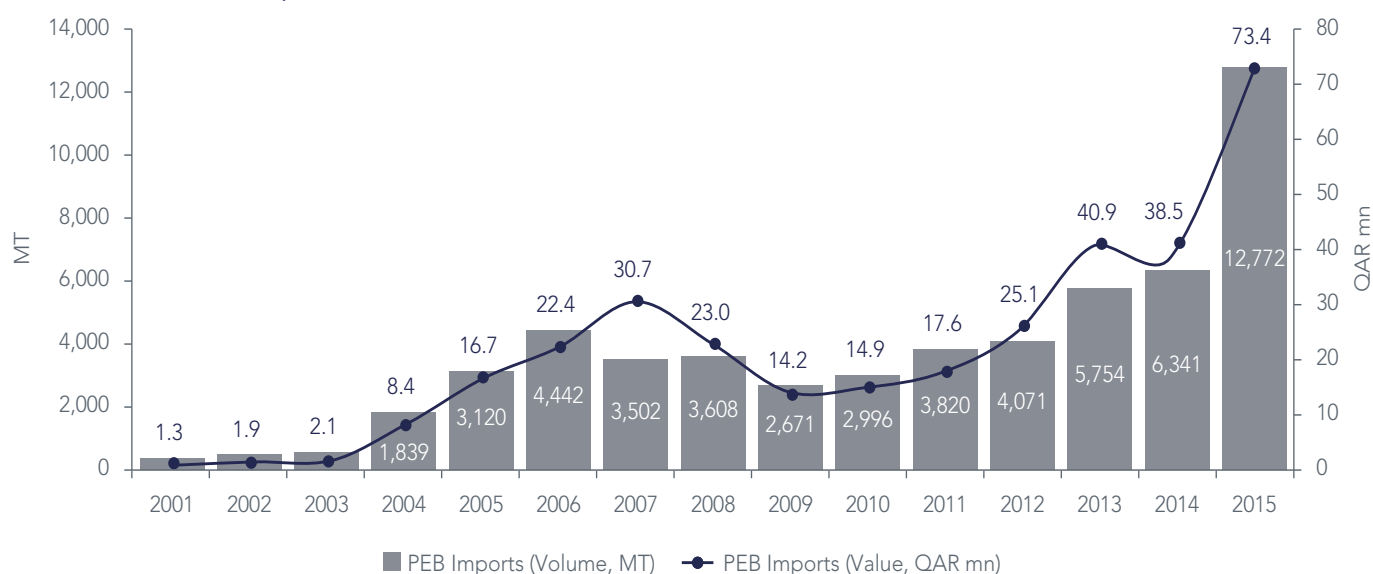
3.2.3. Trade Analysis

3.2.3.1. Historical Trade Analysis

In 2015, Qatar's import of PEBs amounted to 12,772MT and was valued at QAR73.4mn⁵⁷. The imports grew 101% in terms of volume and 91% in terms of value over the previous year, driven by construction of new warehouses and factory sheds in Qatar. The import volumes grew at a CAGR of 33.6% between 2010 and 2015.

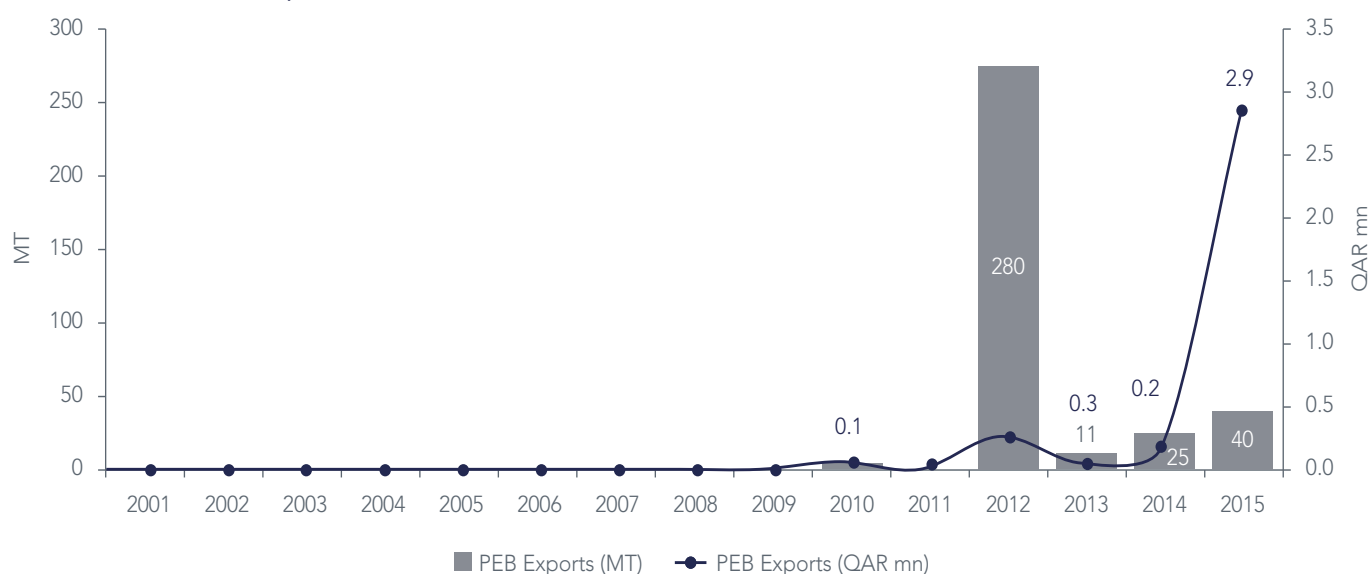
Exports: In 2015, Qatar's PEB exports amounted to 40.4MT and was valued at QAR2.9mn⁵⁸. While the exports grew 63% in terms of volume over the previous year, its growth by volumes increased at a CAGR of 58.8% between 2010 and 2015. The trend in exports depends on domestic manufacturers securing projects outside Qatar. In 2012, BSI Steel secured a project to supply PEBs to the UAE and Saudi Arabia, and as a result, export volumes peaked at 280MT.

Chart 21. Qatar's PEB Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Chart 22. Qatar's PEB Exports, 2001 to 2015



Source: ITC Trademap, Team Analysis

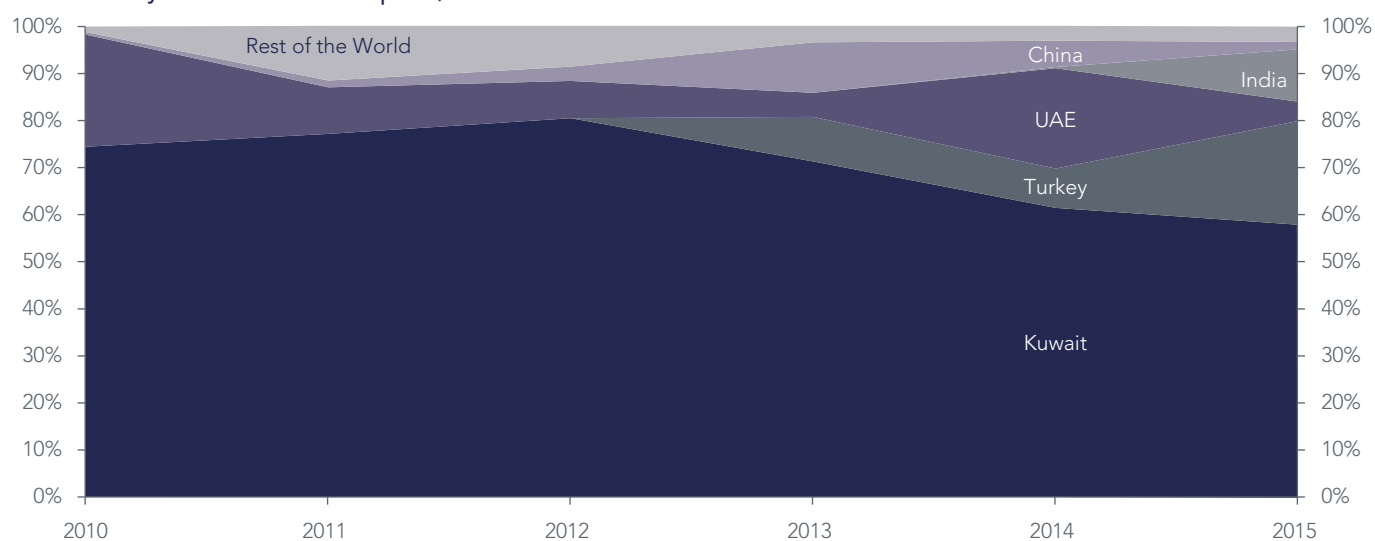
⁵⁷ ITC Trademap

⁵⁸ ITC Trademap Database

3.2.3.2. Trade by Source and Destination

Imports: The analysis of import data from 2005 to 2015 indicates that Kuwait, the UAE, Saudi Arabia, Turkey, Italy and Jordan are the key sources of imports⁵⁹. The top-five sources of Qatar's PEB imports between 2010 and 2015 have been listed in the chart below. Kuwait accounts for the largest with 67% share of PEB imports.

Chart 23. Key Sources of PEB's Imports, 2010 to 2015

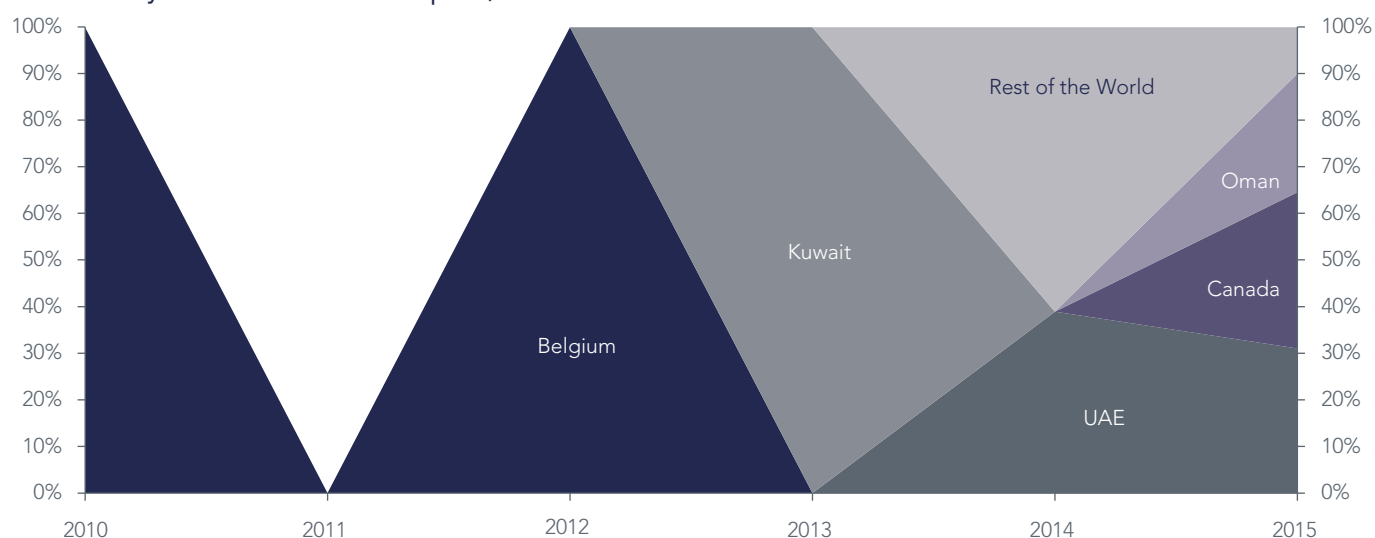


Source: ITC Trademap, Team Analysis

The area graph shown above indicates that the share of top five countries consistently remained above 90% during 2010 to 2015. Kuwait has been the leading exporter to Qatar but its share came down from 80.3% in 2012 to 58% in 2015. In the recent past, countries such as the UAE, Turkey, China and India have increased their exports to Qatar.

Exports: The analysis of export data⁶⁰ from 2010 to 2015 indicates that Belgium, UAE, Canada, Kuwait and Oman are the key destinations of Qatar's PEB exports.

Chart 24. Key Destinations of PEB's Exports, 2010 to 2015



Source: ITC Trademap, Team Analysis

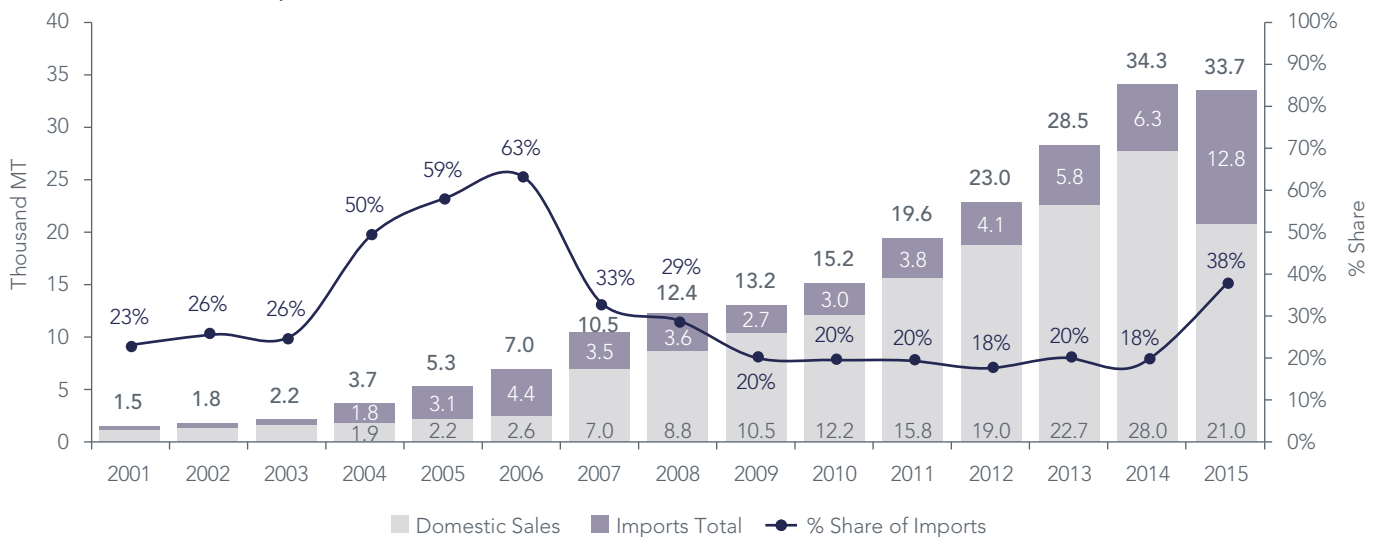
The small quantity of PEB exports has been to nearby countries, such as the UAE, Oman and Kuwait. Qatar did not export PEB products in 2011, and exports to Belgium and Canada are likely to have been on account of the return of imported goods.

^{59, 60} ITC Trademap

3.2.3.3. Share of Imports in Domestic Consumption

Between 2001 and 2003, the domestic demand was in a relatively stable phase where imports ranged between 23% to 26% of the market. With the announcement of the 2006 Asian Games in Qatar, construction activities picked up rapidly in 2004. Imports of PEBs increased almost two-folds since domestic manufacturers were unable to cater to the sudden spike in the demand⁶¹. The rapid market growth and the widening demand–supply gap between 2004 and 2006 supported the establishment of new domestic units in Qatar. BSI Steel commenced manufacturing PEBs in 2007, as a result, the share of imports servicing the market fell from the peak of 63% in 2006 to 29% in 2008 and thereon stabilized in the range of 18% to 20% during 2009 and 2014. About 38% of the market was served by imports in 2015.

Chart 25. Qatar's PEB Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

3.2.3.4. Assessment of Export Opportunities

Primary interviews indicate that Qatar's production is not cost competitive as compared to other manufacturers based in GCC countries and hence, PEB manufacturers do not consider exports a significant opportunity as compared to the opportunities in the domestic market. Exports are most likely to be limited to rare opportunities where Qatari PEB manufacturers win international projects and their PEB pricing is found to be competitive with local players in export market.

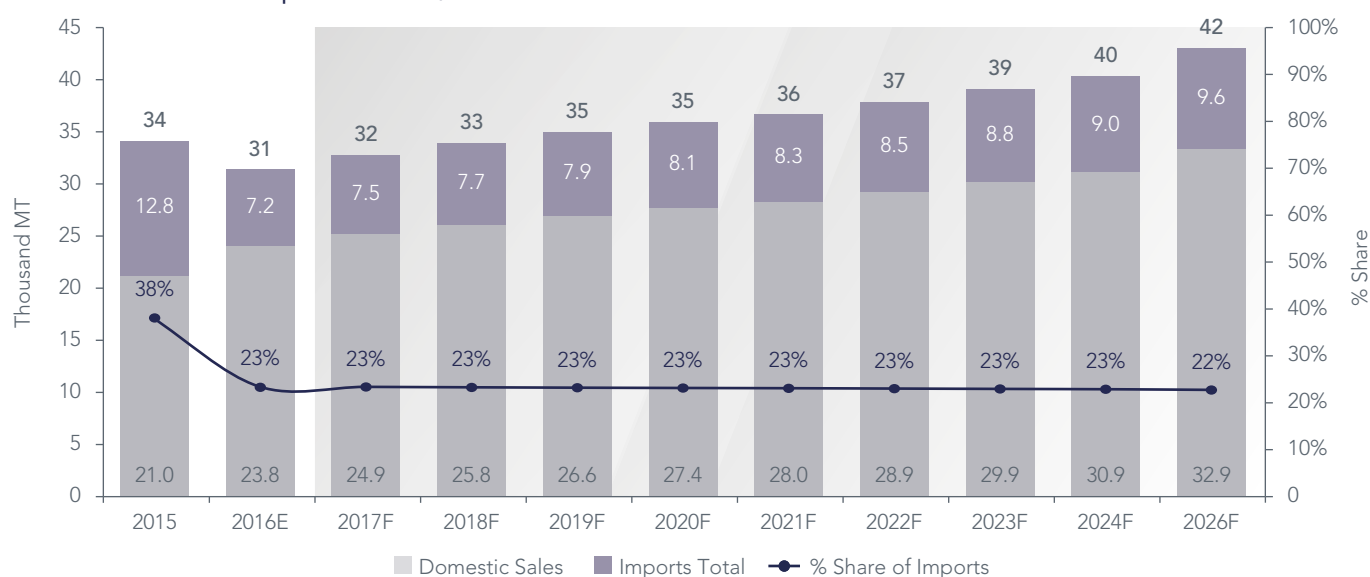


⁶¹ Team Analysis

3.2.3.5. Trade Forecast

Imports: The import forecast for PEBs indicates that about 23% of the market (in quantity terms) would be serviced by imports. Although PEBs imported from Kuwait, the UAE and Saudi Arabia are about 15% cheaper than domestic production, primary interviews indicate that imports are expected to decline on account of local manufacturers serving the domestic demand. Imports are likely to decline from 12,772MT in 2015 to 9,555MT in 2026.

Chart 26. Qatar's PEB Imports Forecast, 2015 to 2026

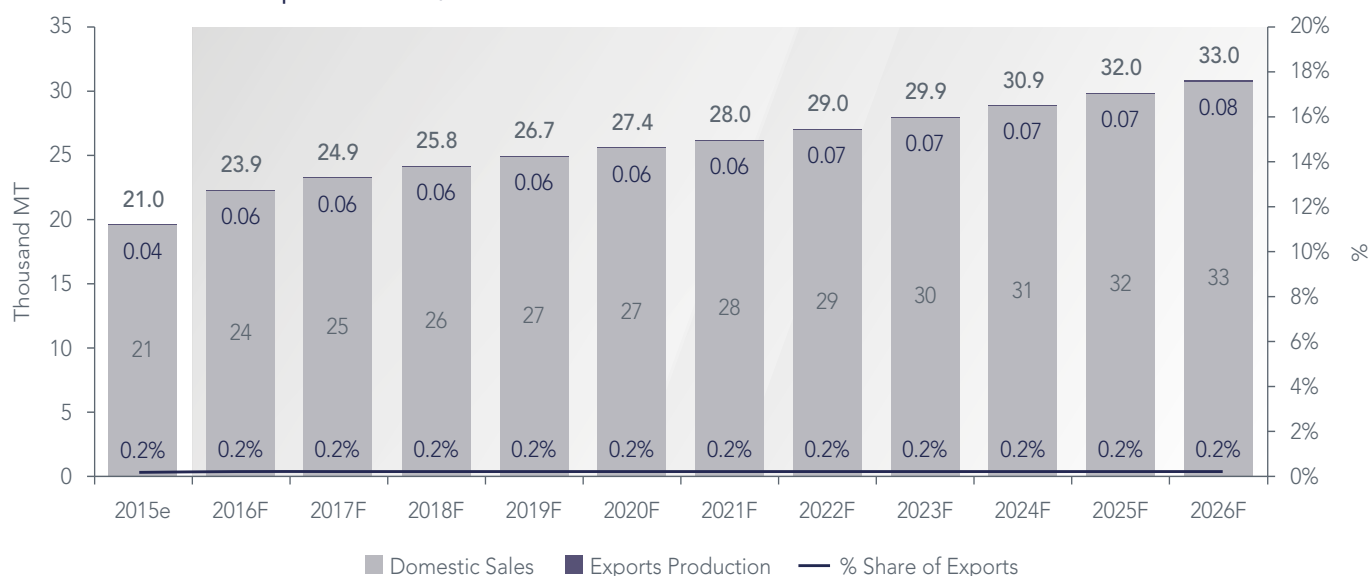


Source: Team Analysis, ITC Trademap

Exports: The export forecast for PEBs indicates that exports would offer a minor opportunity. As per the forecast, less than 1% of the domestic production (in quantity terms) is estimated to be exported. Primary interviews indicate that Qatar's production is not cost competitive and hence, PEB units do not consider exports an opportunity.

The exports are likely to range from 40.4MT in 2015 to 76.2MT in 2026⁶².

Chart 27. Qatar's PEB Exports Forecast, 2014 to 2026



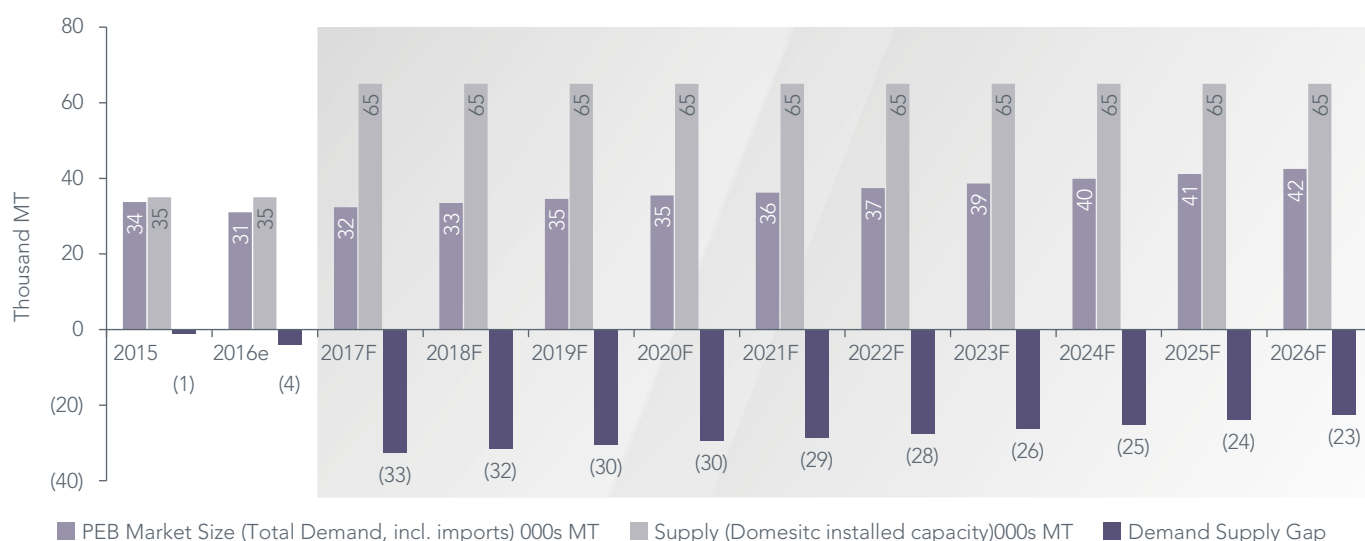
Source: Team Analysis, ITC Trademap

⁶² Team Analysis

3.2.4. Demand–Supply Analysis

The total domestic capacity for PEBs in Qatar is estimated at 35,000MT per annum. Primary interviews suggest that due to sufficient domestic demand, Seashore Steel is also planning to set up a PEB manufacturing unit with a capacity of 30,000TPA, which is expected to commence production in 2017. Thus, Qatar's PEB manufacturing capacity is forecast to reach 78,000MT in 2026⁶³.

Chart 28. Qatar's PEB Demand-Supply Analysis, 2015 to 2026



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015, ITC Trademap

Comparing with domestic sales projection, PEB demand (net of imports) is forecast to reach 42,485MT in 2026, thus leaving a demand–supply gap of 22,515MT.

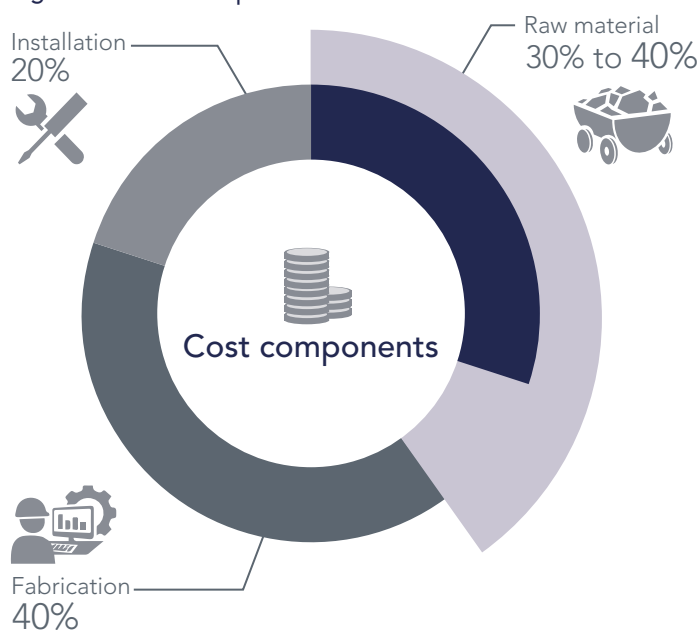
3.2.5. Pricing Analysis

The key factors affecting product pricing are raw material costs and fabrication costs. These collectively account for 70% to 80% of the production costs⁶⁴. Raw materials, such as steel sections and plates, are not produced in Qatar and have to be imported by domestic PEB manufacturers, as a result raw material prices are on the higher side for local producers since they rely entirely on imports. Steel prices are affected by global macro level trends, thus affecting the selling price of finished goods (PEBs). The key components of production costs are provided in the table below. Profits and contingency are assumed at an additional 10% to 15% and 5% to 10% over cost components, respectively, to arrive at pricing of PEBs.

Price Forecast

Trends in the selling price of PEBs are affected by global prices of steel. The average domestic prices and average import prices for PEBs in Qatar have been forecast considering the trends in the iron ore prices (2015 to 2026) forecast by the World Bank⁶⁵.

Figure 10: Cost Components of PEBs



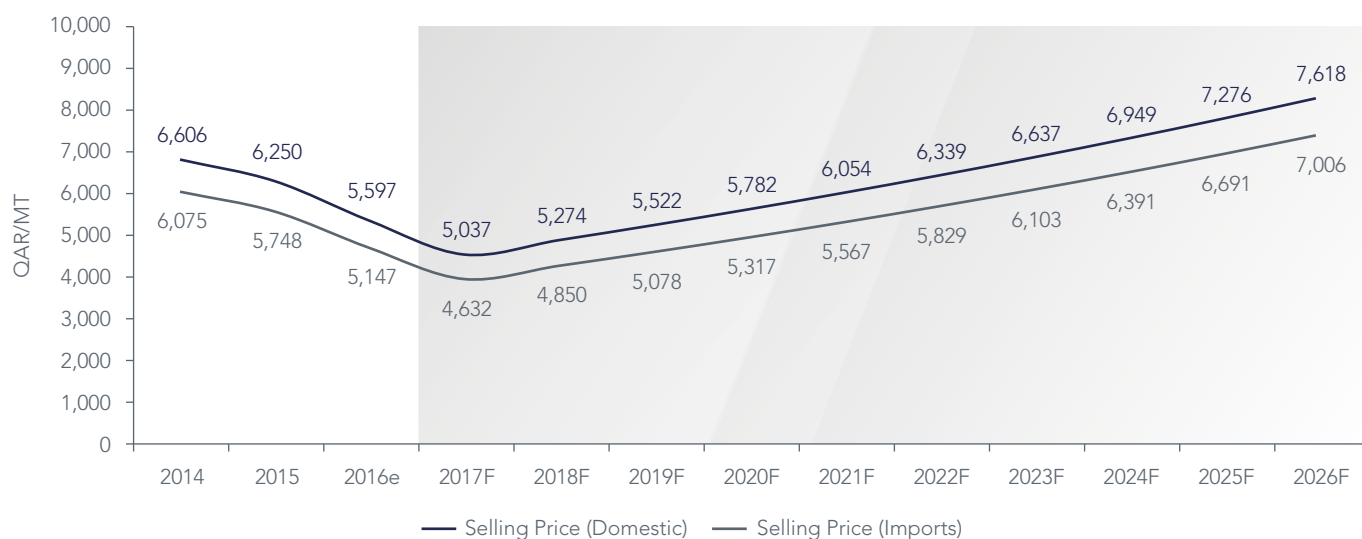
⁶³ Team Analysis

⁶⁴ Primary Interviews

⁶⁵ Team Analysis

The average domestic prices for PEBs are expected to range from QAR5,597 in 2016 to QAR7,618 in 2026, implying a CAGR of 3.1%, while the average import prices are expected to range from QAR5,147 in 2016 to QAR7,006 in 2026, implying a CAGR of about 2.7%.

Chart 29. Qatar's PEB Selling Prices Forecast, 2014 to 2026



Source: Team Analysis, Primary Interviews, World Bank

3.2.6. Regulatory Analysis

QCS 2014: As PEBs are used in the construction sector, their production, installation and usage are mainly regulated as per the following sections of Qatar Construction Specifications (QCS) 2014:⁶⁶

a) QCS 2014 Section 16: Structural steelworks

This section has general instructions and regulations related to materials, drawing, fabrication, welding, bolting, accuracy of fabrication, erection, accuracy of erected steel work and protected treatment.

b) QCS 2014 Section 17: Metal work

This section has general instructions and regulations related to material classification, metal doors and windows, architectural metalwork, light metal support, cladding support and workmanship.

In addition to the above, steel fabrication units need to be familiar with other relevant sections of QCS that regulate construction activities that have an interface with PEBs. These sections include section 13 (masonry), section 14 (roofing), section 4 (foundation and retaining structures) and section 5 (concrete).

The Ministry of Environment: PEB manufacturing units need to be approved by the Ministry of Environment.

Civil Defense Department (Ministry of Interior): All building material products need an approval from the Civil Defense Department (Ministry of Interior) as per Emiri Decree No. 9/2012. PEB manufacturing units have to comply with the applicable fire safety norms.

ISO Certification: Obtaining ISO certifications (Quality 9001, OHSAS 18001 and Environment 14,001) are vital for the tendering purposes.

Welder Certification: All the welders working in a PEB manufacturing facility have to be certified by a recognized certification agency, such as the American Welding Society or by a testing, inspection and certification agency, such as Bureau Veritas.

Apart from the above, all prospective entrepreneurs need to follow applicable laws related to company registration, industrial license, and obtaining land and building permissions for setting up a PEB manufacturing facility in Qatar.

⁶⁶ Qatar Construction Specifications (QCS) 2014

3.2.7. SWOT Analysis and Michael Porter's Five-Force Analysis

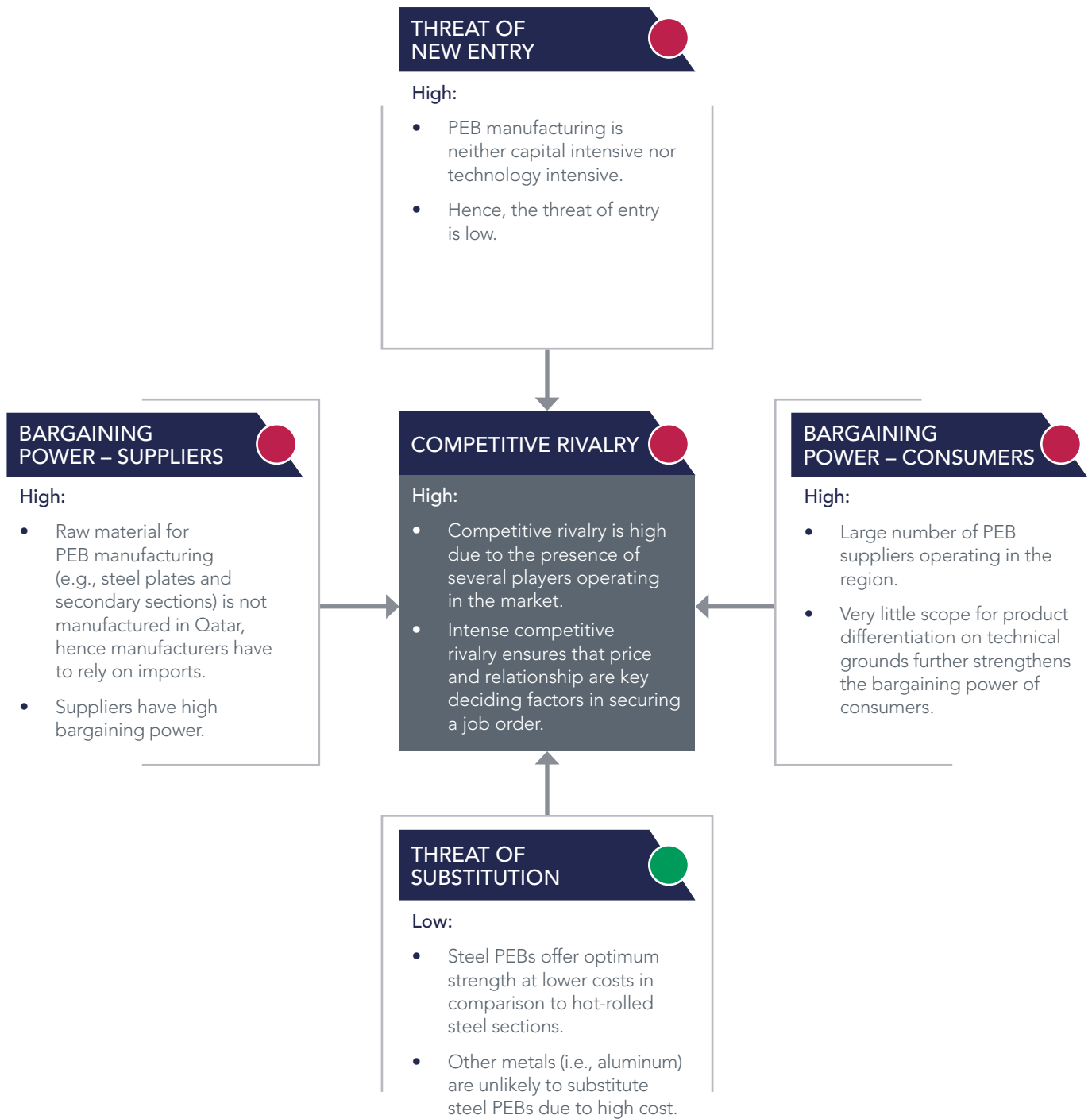
3.2.7.1. SWOT Analysis

Figure 11: PEB SWOT Analysis



3.2.7.2. Michael Porter's Five Forces model analysis

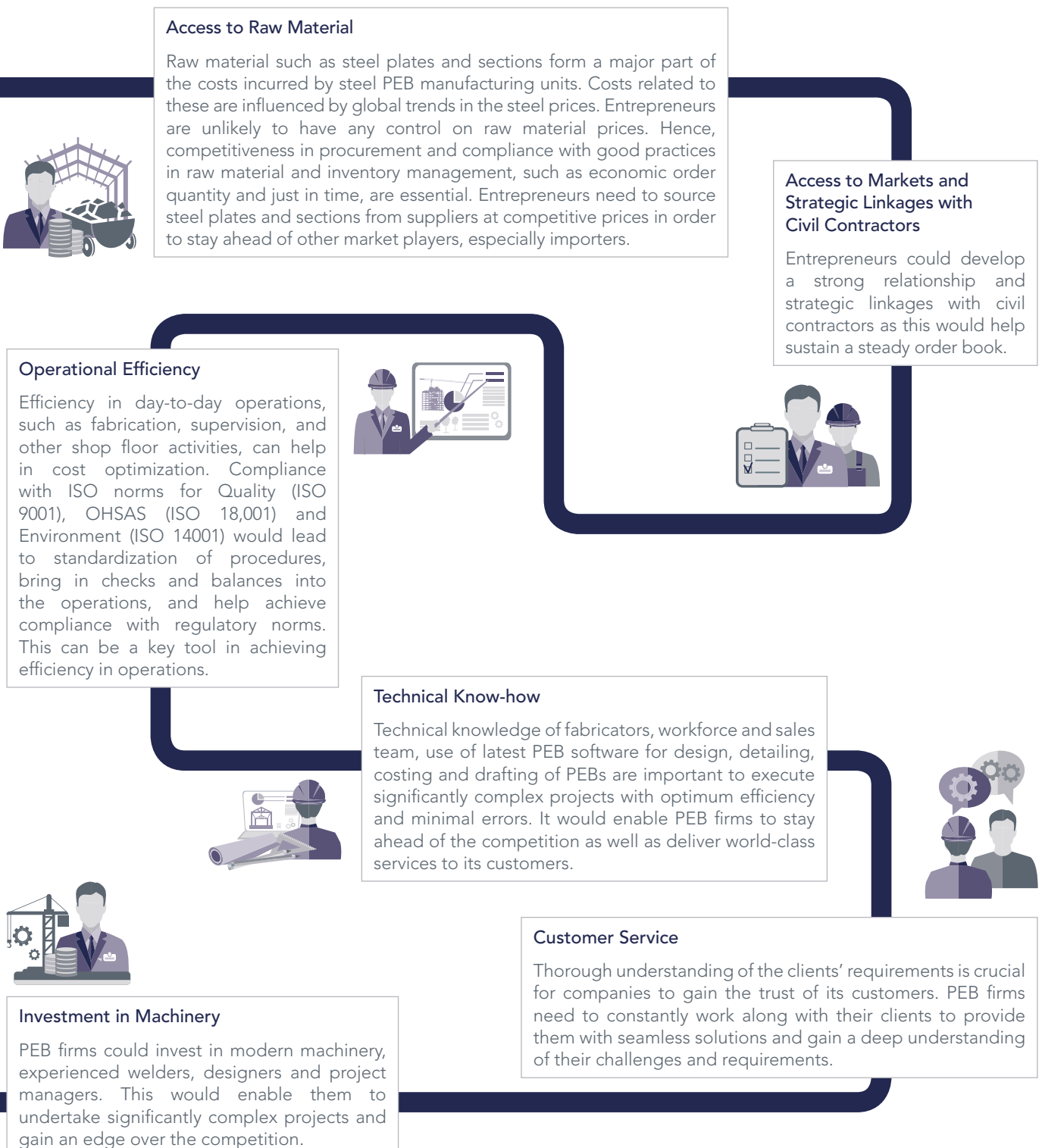
Figure 12: Michael Porter's Five Forces Model (Pre-engineered Building)

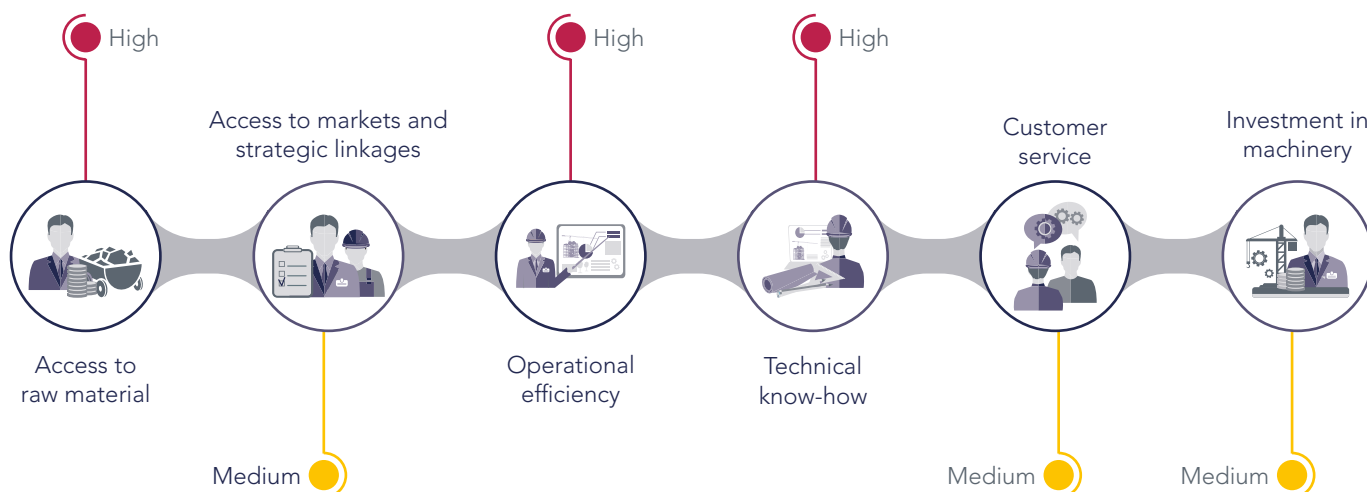


3.3. Critical Success Factors

Critical Success Factors include the following:

Figure 13: Critical Success Factors - Pre-engineered Building





3.4. Outlook

Qatar's PEB market has witnessed a steady growth wherein the demand has grown from 5,312MT (QAR29.4mn) in 2005 to 33,732MT (QAR201.8mn) in 2015 indicating a growth of 20.3% in volume and 21.2% in value terms. Establishment of a domestic manufacturing facility in 2006 substantially reduced Qatar's dependence on PEB imports from 63% in 2006 to about 38% share of the total market in 2015. This indicates that import substitution was successfully achieved and hence, there is opportunity for new domestic players to enter the market.

In the medium to long-term, large-scale developments, such as the Qatar rail and metro, New Doha Port Development, SEZs promoted by Manateq, FIFA 2022 stadia, industrial projects and upcoming real estate projects, would drive the demand for PEBs. On the back of strong demand drivers, the market is expected to grow at a CAGR of 5.4% from QAR201.8mn in 2015 to an estimated QAR317.8mn in 2026.

Pertaining to the challenges, the market is likely to remain competitive and price sensitive. Dependence on imports for procurement of raw material and high operational expenses (salaries, rents, etc.) as compared with other countries, such as the UAE and Saudi Arabia, would limit export potential to rare opportunities, i.e., less than 1% of domestic production. Imports are likely to remain cheaper than domestic production and further heighten the challenges.

Given the market size and the growth potential of this segment, driven primarily by factory, warehousing and industrial projects, subject to competitive challenges, new entrepreneurs can benefit from average incremental opportunities worth QAR15mn (1,148MT) per annum from 2017 to 2026. However, as the average incremental business per annum until 2026 is low for offering viable opportunities, entrepreneurs would have to target related segments, such as structural steel fabrication and architectural steel fabrication, and focus on being cost competitive to be able to substitute imports and gain market share from existing players.



4. PRE-FABRICATED BUILDINGS

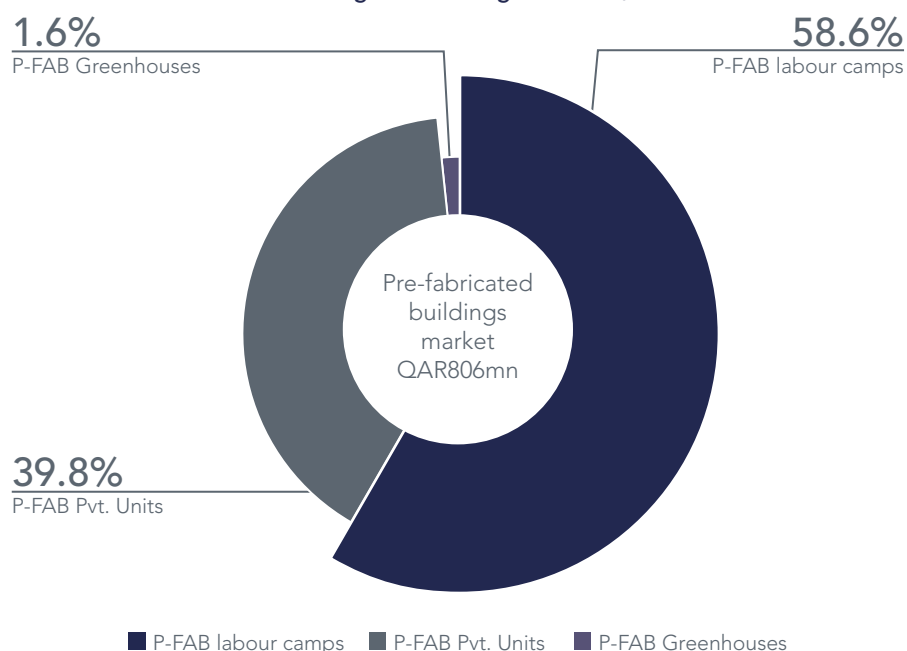
4.1. Qatar Market Overview

Pre-fabricated buildings offer several advantages as they are easy to construct, install and disassemble. Pre-fabricated buildings are economic and have a long lifespan of 15 to 20 years. They have a wide range of applications in labor accommodations, private units (site offices, mosques, majlis, villa extensions and security cabins) and greenhouses.

Qatar's pre-fabricated buildings market was valued at QAR806mn in 2015⁶⁷, constituting 10.4% of the overall structural metals sector. Pre-fabricated buildings for labor accommodation forms the largest segment, with a market share of 58.6%, followed by private units with 39.8% share and greenhouses accounting for 1.6% share.

Qatar has 20 manufacturing units in this segment, of which a few large players have 83.2% share in the sales by domestic players followed by medium-sized players and small players that command 11.8% and 5% share, respectively. Pre-fabricated labor accommodations and pre-fabricated private units have minor export opportunities but pre-fabricated greenhouses are not exportable. The following sections of the report provide a detailed market analysis on each of these products.

Chart 30. Pre-fabricated Buildings Market Segmentation, 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

⁶⁷ Team Analysis



Pre-fabricated Labor Accommodation



Pre-fabricated
greenhouses



Site office

Mosque

Security cabin

4.1.1. Pre-fabricated Labor Accommodations

4.1.1.1. Demand-Side Analysis

Demand for pre-fabricated labor accommodations is driven by large-scale real estate construction and infrastructure development projects in Qatar. Construction of new roads, buildings, hotels and stadiums in view of the FIFA 2022 World Cup and the Qatar National Vision 2030 are the dominant activities in the construction sector. This has given rise to a tremendous influx of laborers into Qatar, to complete these projects within the scheduled timelines. Due to the low cost and ease of construction, pre-fabricated labor accommodations can be installed and occupied within a shorter span of time than conventional buildings, thus making them a preferred option for accommodating the large labor workforce.

4.1.1.1.1. Historical and Current Market Size

Between 2001 and 2007, the demand for pre-fabricated labor accommodation grew from QAR44.4mn (82,416sqm) in 2001 to QAR172.5mn (196,215sqm) in 2007, growing at a CAGR of 25.4% in terms of value and 15.6% in terms of volume. Market growth was driven by new industrial developments and demand from construction projects related to the Asian Games 2006. The market peaked in 2008 to reach QAR327.6mn (380,265sqm) since many projects launched during 2004 and 2008 were due for completion in 2008 and 2009. The impact of the slowdown was witnessed in 2010, with a lag of twelve to eighteen months. Between 2010 and 2015, the market grew from QAR244.9mn (255,712sqm) in 2010 to QAR472.4mn (532,937sqm) in 2015 at a CAGR of 14.0% in terms of value and 15.8% in terms of volume.

4.1.1.1.2. Demand Drivers

Demand Drivers: The demand for pre-fabricated labor accommodation is chiefly driven by large-scale commercial and infrastructure development projects, such as new roads, rail lines, hotels and stadiums, which require a substantially large labor workforce.

Customer Segment: Civil contractors undertaking construction of commercial and infrastructure development projects are the customer segment.

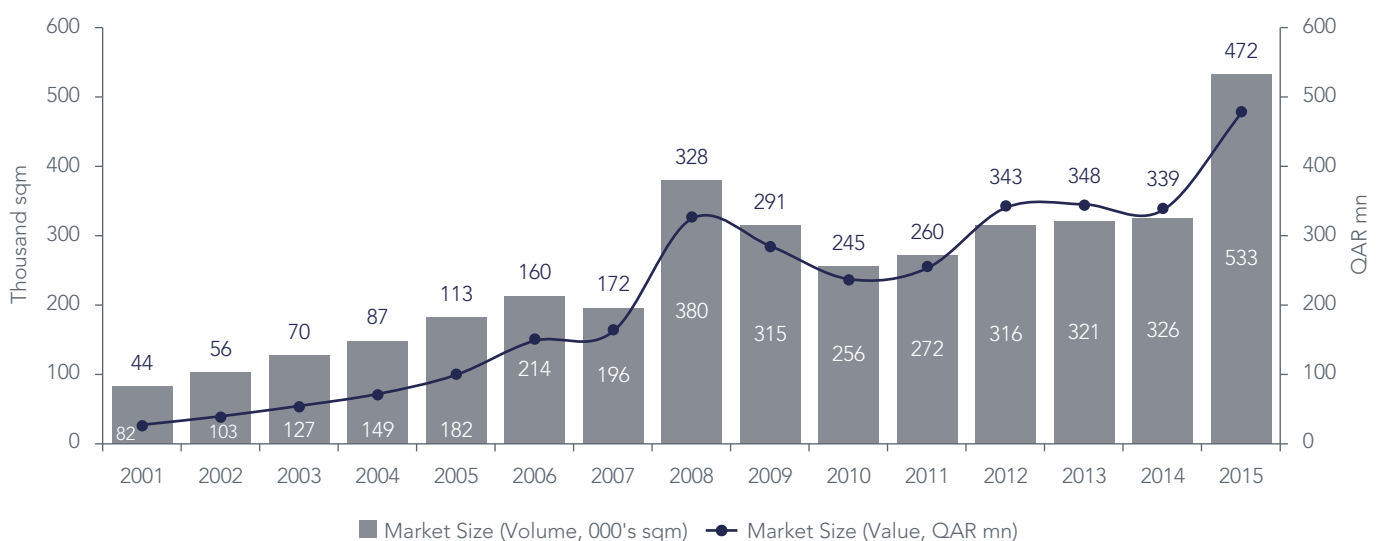
Key Influencers: Architects and interior designers can influence the decision on the selection of pre-fabricated buildings. Manufacturers of pre-fabricated buildings have to be listed as an approved vendor with the civil contractors.

4.1.1.1.3. Demand Forecast

The decline in oil prices during 2014 and 2015 is likely to affect the development of new projects, thereby dampening the momentum of construction activities across the country. The market size is estimated to have reduced by 40.6% from 532,937sqm in 2015 to 316,746sqm in 2016.

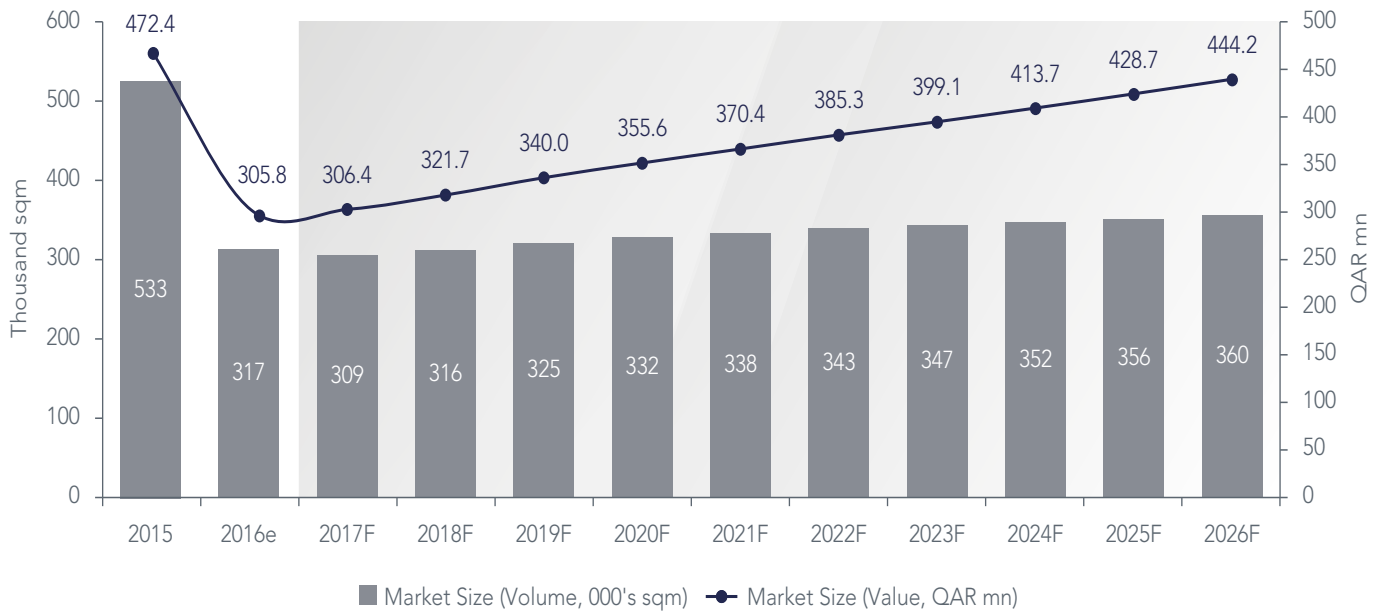
The market for pre-fabricated labor accommodation is expected to grow from 316,746sqm in 2016 to an estimated 360,022sqm in 2026, registering a CAGR of 1.3%. In value terms, the market would grow at a CAGR of 3.8% from QAR305.8mn in 2015 to reach QAR444.2mn in 2026.

Chart 31. Qatar's Pre-fabricated Labor Accommodation Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

Chart 32. Qatar's Pre-fabricated Labor Accommodation Demand Forecast, 2015 to 2026



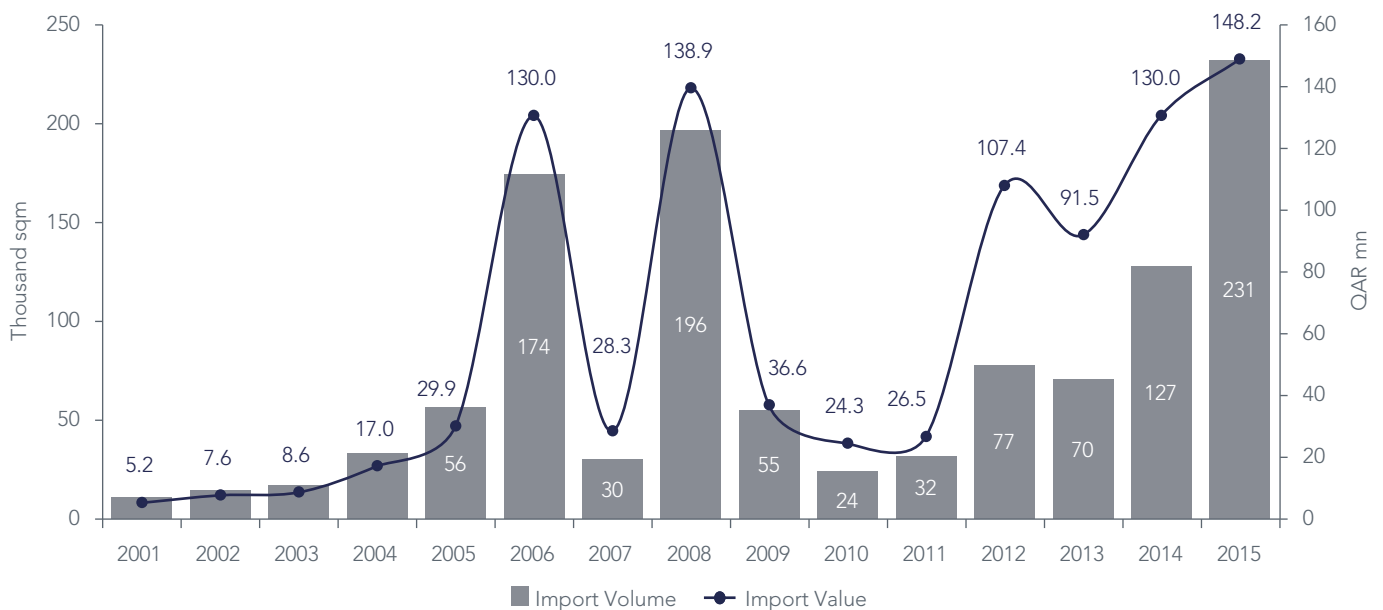
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

4.1.1.2. Trade Analysis

4.1.1.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 10,814sqm (QAR5.2mn) in 2001 to 195,718sqm (QAR138.9mn) in 2008. Thereon, imports have been irregular, rising and falling in alternate years to reach 231,017sqm (QAR148.2mn) in 2015.

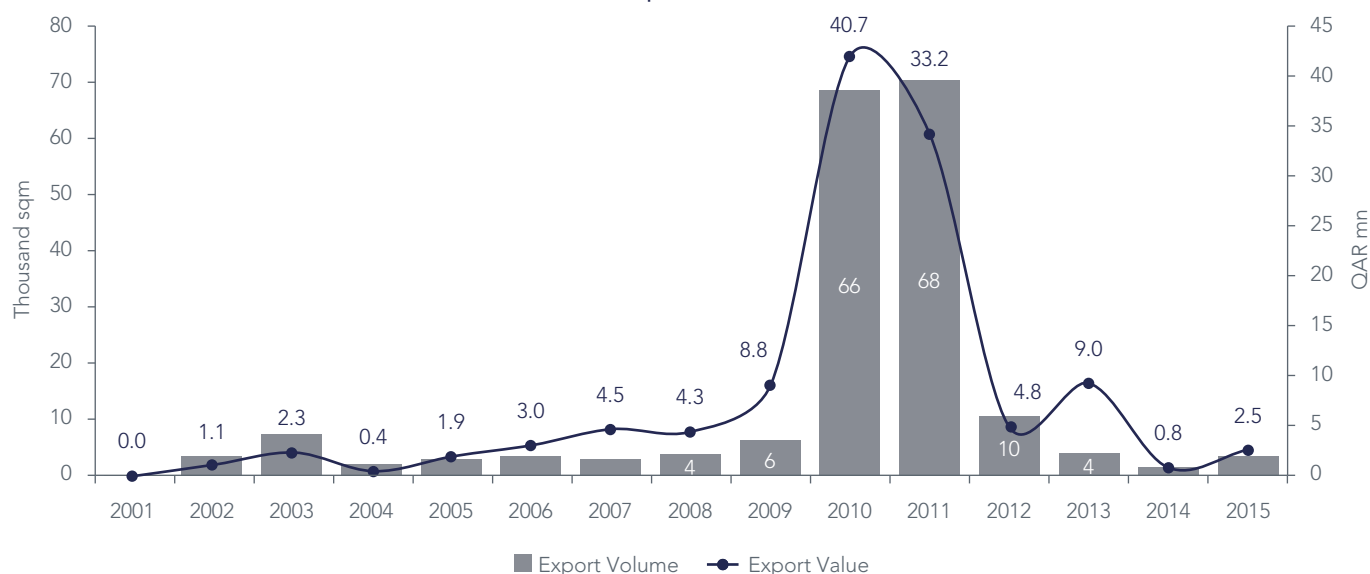
Chart 33. Qatar's Pre-fabricated Labor Accommodation Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: The analysis of historical export data indicates that exports have been highly irregular and small as compared to the domestic production. Between 2001 and 2015, the annual exports averaged at 12,330sqm of pre-fabricated labor accommodation.

Chart 34. Qatar's Pre-fabricated Labor Accommodation Exports, 2001 to 2015

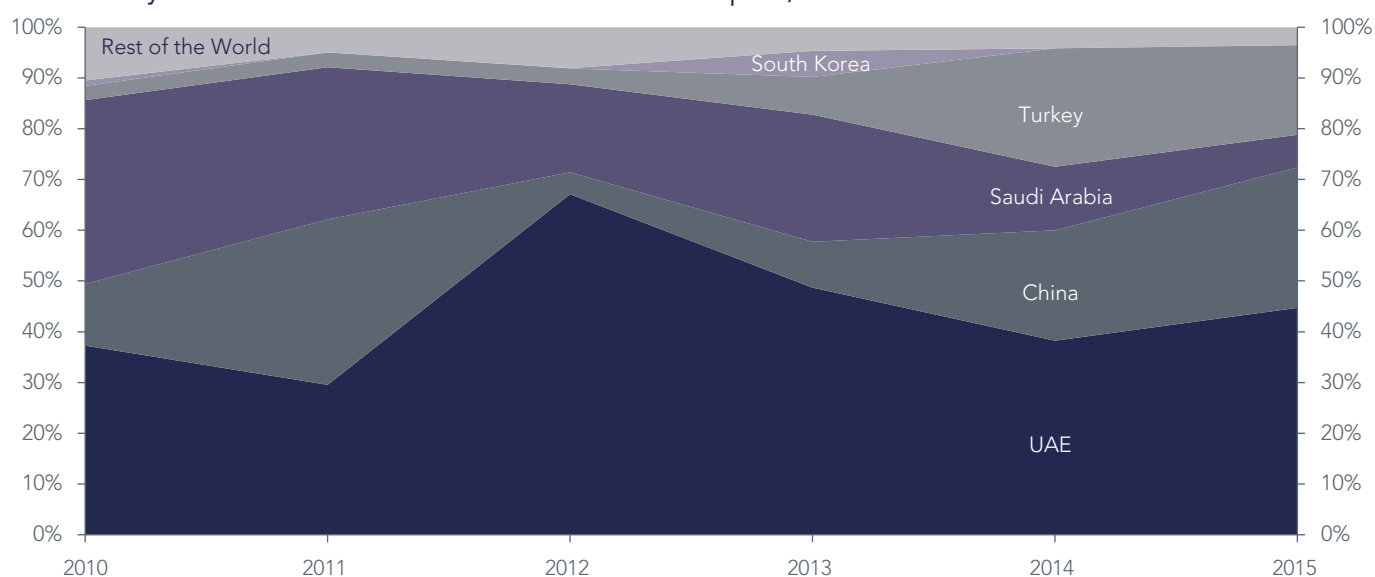


Source: ITC Trademap, Team Analysis

4.1.1.2.2. Trade by Source and Destination

Imports: The analysis of pre-fabricated labor accommodation imports amounting to 561,530sqm from 2010 to 2015 indicates that the UAE (46%), China (20%), the KSA (14%), Turkey (14) and Korea (1%) are the major sources of imports.

Chart 35. Key Sources of Pre-fabricated Labor Accommodation Imports, 2010 to 2015

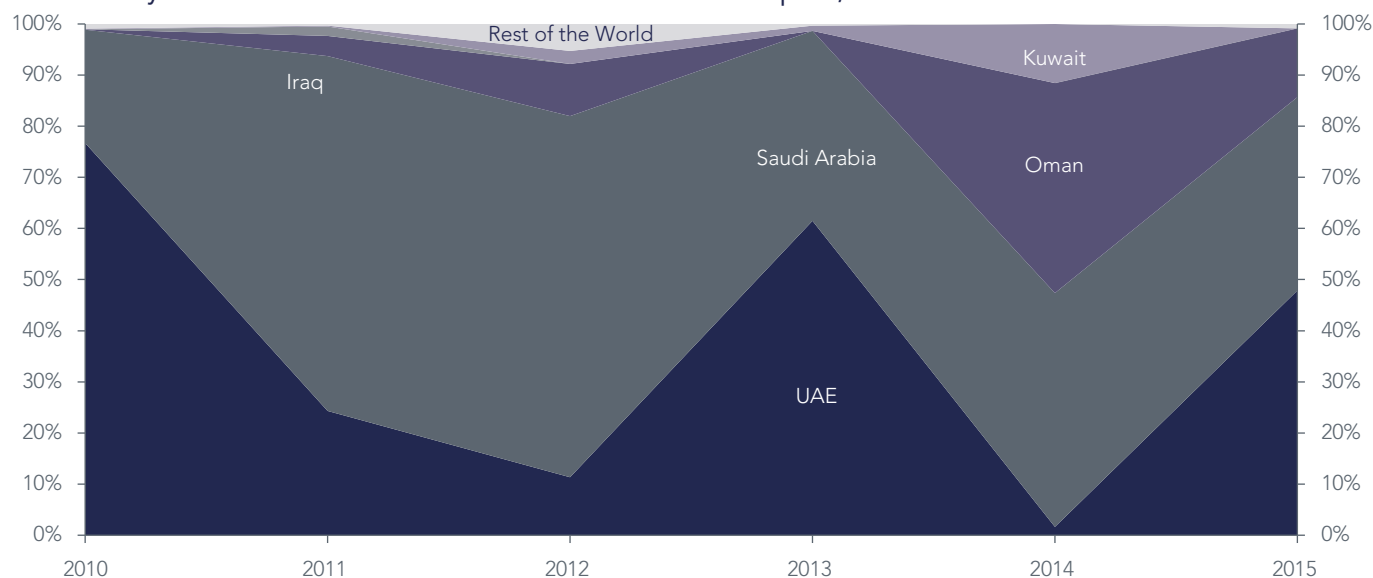


Source: ITC Trademap, Team Analysis

The area graph shown above indicates that the share of top five countries gradually increased from 89.5% in 2010 to 96.5% in 2015. While the UAE has dominated the imports since 2010, in the recent years, that share of China and Turkey has increased and that of Saudi Arabia has decreased.

Exports: The analysis of pre-fabricated labor accommodation exports amounting to 153,860sqm from 2010 to 2015 indicates that the UAE (47%), the KSA (47%), Oman (3%), Iraq (1%) and Kuwait (0.4%) are the major destinations for exports.

Chart 36. Key Destinations of Pre-fabricated Labor Accommodation Exports, 2010 to 2015



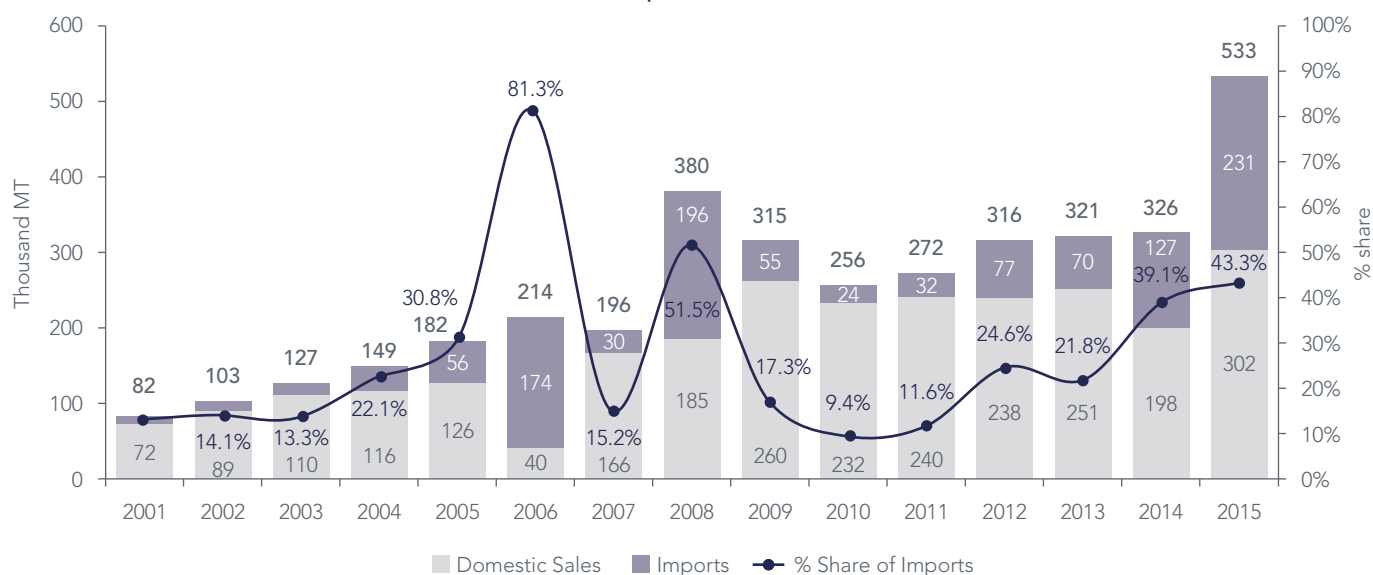
Source: ITC Trademap, Team Analysis

The analysis of export data indicates that 95% to 99% of Qatar's exports have been to GCC countries, such as the UAE, Saudi Arabia, Oman and Kuwait. In 2011, Qatar exported small quantities to Iraq. In the recent years, the UAE, Oman and Kuwait have been the leading destinations for exports.

4.1.1.2.3. Share of Imports in Domestic Consumption

Share of imports in Qatar's pre-fabricated labor accommodation market was in the range of 13.1% to 22.1% during 2001 and 2004. Due to the spike in demand in 2006, the share of imports significantly increased to 81.3% of the market, but declined to the range of 15.2% to 21.8% of the market, between 2007 and 2013 (with the exception of 2008). Domestic players had larger market shares during 2009 and 2014. In 2015, 43.3% of the market was serviced by imports.

Chart 37. Qatar's Pre-fabricated Labor Accommodation Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

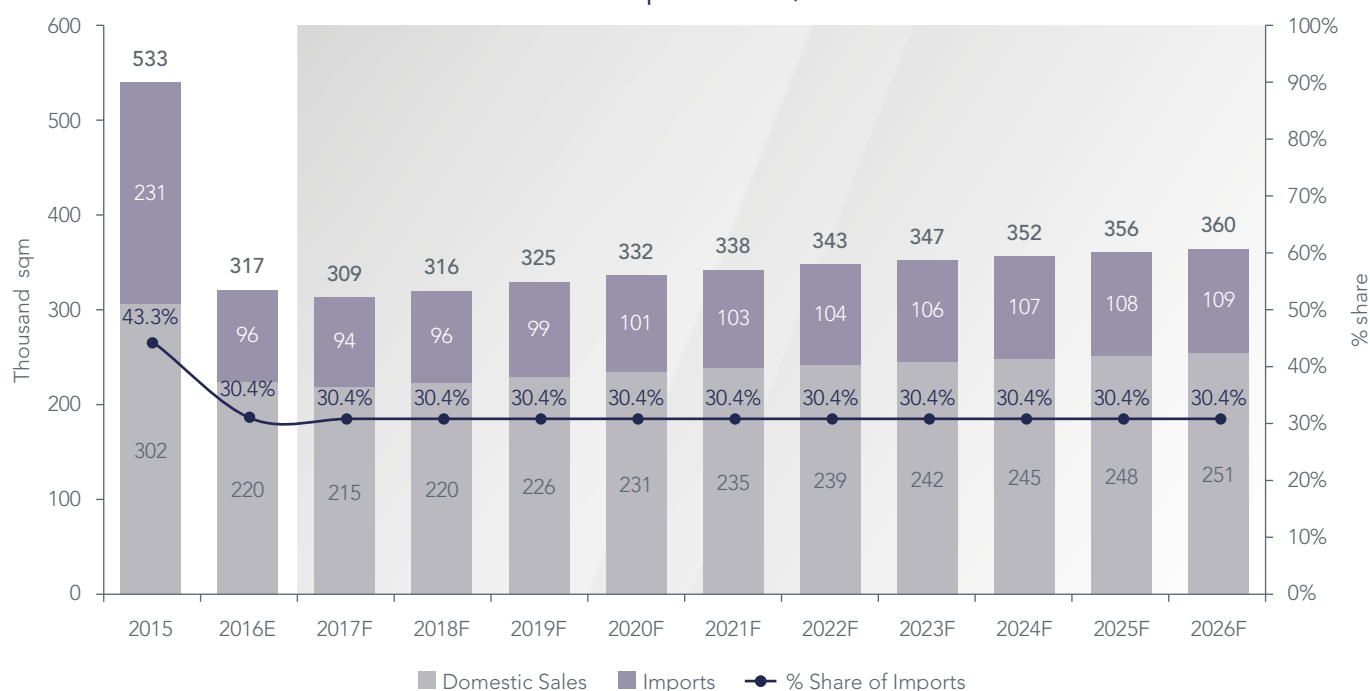
4.1.1.2.4. Assessment of Export Opportunities

Primary interviews with pre-fabricated building unit manufacturers indicate that, due to high cost of operations, Qatar's production is not cost competitive and hence pre-fabricated labor accommodation unit manufacturers do not consider the export market as an attractive opportunity. Due to high cost of salaries, rents and raw materials, production cost in Qatar is high as compared to those in other countries in the GCC region. Analysis of export data indicates that during 2011 and 2015, exports of pre-fabricated labor accommodation averaged at 1.9% of the domestic production.

4.1.1.2.5. Trade Forecast

Imports: The import forecast of pre-fabricated labor accommodation units indicates that about 30.4% of the market requirements (in quantity terms) will be met by imports. Primary interviews with manufacturers of pre-fabricated buildings indicate that imports are 8% to 12% cheaper than domestic production, however, domestic manufacturers with their local expertise and quicker delivery time are expected to capture the bulk of the domestic demand. Imports are likely to range from 96,292sqm in 2016 to 109,448sqm in 2026.

Chart 38. Qatar's Pre-fabricated Labor Accommodation Import Forecast, 2015 to 2026

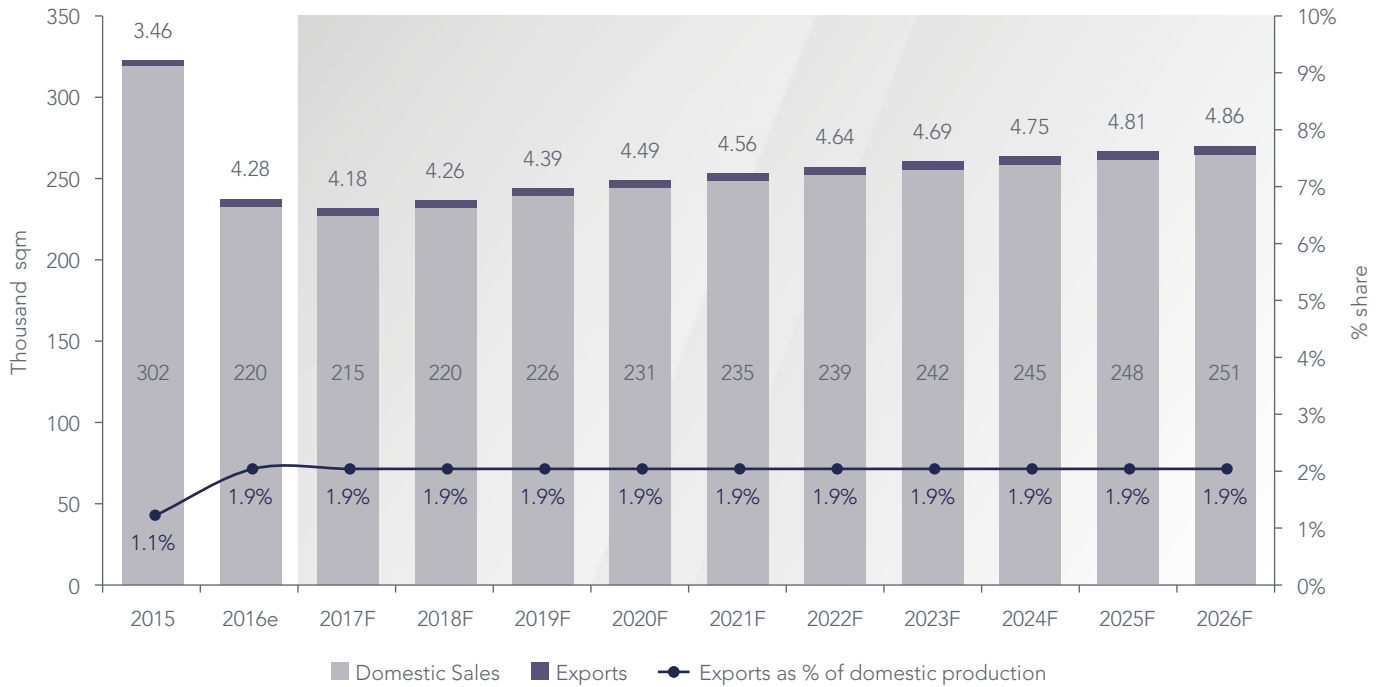


Source: Team Analysis, ITC Trademap

Exports: The export forecast of pre-fabricated labor accommodation units indicates that exports may have a minor opportunity as only 1.9% of the domestic production may be exported, subject to rare opportunities, e.g., Qatar-based manufacturer securing a job order from projects in the UAE or the KSA. Exports are likely to range from 4,280sqm in 2016 to 4,864sqm in 2026.



Chart 39. Qatar's Pre-fabricated Labor Accommodation Export Forecast, 2015 to 2026

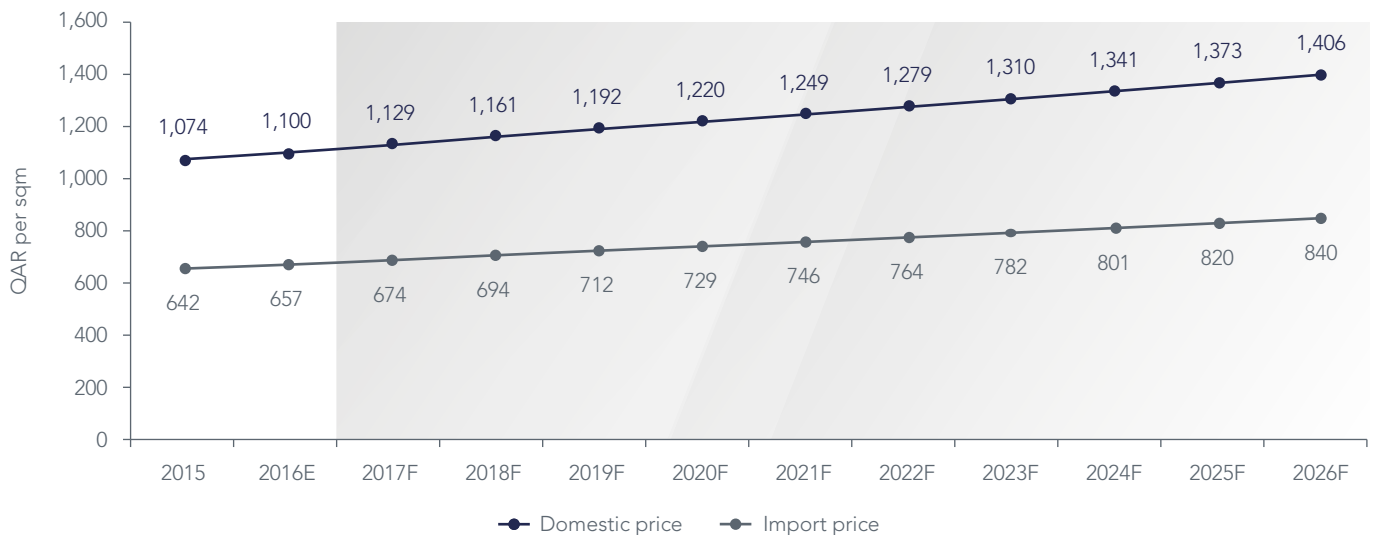


Source: Team Analysis, ITC Trademap

4.1.1.3. Pricing Analysis

Selling prices for pre-fabricated labor accommodation units are quoted on a per sqm basis and vary as per the size; type of material used for wall construction and flooring; number of floors and amenities such as kitchen, toilet, and storage tanks; which can be housed within the accommodation. Currently, the 2016 domestic prices for pre-fabricated labor accommodation units are in the range of QAR1,000 to QAR1,200 per sqm (average QAR1,100 per sqm). On an average, imports are 8% to 12% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR1,406 per sqm in 2026 for domestic production and QAR840 per sqm for imports.

Chart 40. Qatar's Pre-fabricated Labor Accommodation Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

4.1.2. Pre-fabricated Private Units

4.1.2.1. Demand-Side Analysis

Pre-fabricated private units include site offices, mosques, majlis, villa extensions and security cabins. The demand for these units is driven by both small- and large-scale real estate construction and infrastructure development projects. Construction of real estate asset classes such as villas and multi-story residential buildings are likely to be the prime demand drivers for most pre-fabricated private units.

4.1.2.1.1. Historical and Current Market Size

Between 2001 and 2007, the demand for pre-fabricated private units grew from QAR30.2mn (35,321sqm) in 2001 to QAR124.3mn (84,092sqm) in 2007, growing at a CAGR of 26.6% in terms of value and 15.6% in terms of volume. Market growth was driven by new developments and demand from construction projects related to the Asian Games 2006. The market peaked in 2008 to reach QAR274.6mn (162,971sqm) since many projects launched during 2004 and 2008. The slowdown of 2008 and 2009 led to subdued real estate development activities in the subsequent years, which reduced the market size to 109,591sqm in 2010. Thereon, the market recovered at a slow yet positive pace and is estimated to have reached QAR321.2mn in 2015 (208,722sqm).

4.1.2.1.2. Market Size Segmentation by Products

Pre-fabricated private units include site offices, mosques, majlis, villa extensions and security cabins. Mosques constitute the largest share of the pre-fabricated private units market with 40% share, followed by majlis with 20% share. Site offices and security cabins account for 15% market share each, followed by other units, such as rooms for drivers and maids and villa extensions, accounting for 10% of the market share.

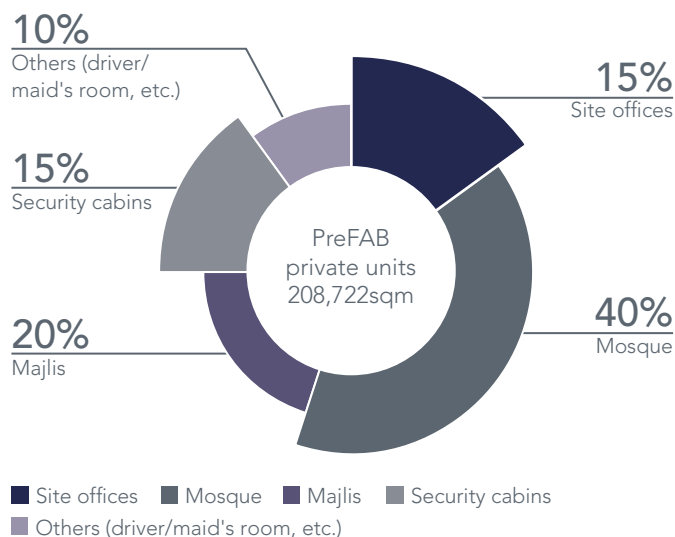


Chart 41. Qatar's Pre-fabricated Private Units Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

Chart 42. Pre-fabricated Private Units Segmentation, by Volume: Domestic, 2015



Source: Team Analysis, Primary Interviews

4.1.2.1.3. Demand Drivers

Demand Drivers: The demand for pre-fabricated private units is chiefly driven by residential, commercial and infrastructure development projects such as housing projects, new roads, rail lines, hotels and stadiums.

Customer Segment: Civil contractors undertaking the construction of residential, commercial and infrastructure development projects are the customer segment.

Key Influencers: Architects and interior designers can influence the decision on selection of pre-fabricated private units. Manufacturers of pre-fabricated buildings have to be listed as an approved vendor with the civil contractors.

4.1.2.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new projects that are either planned or underway. This would dampen the momentum of construction activities across the country. The market size is estimated to have reduced by 35.0% from 208,722sqm in 2015 to 135,748sqm in 2016.

The market for pre-fabricated private units is expected to grow from 135,748sqm in 2016 to an estimated 154,295sqm in 2026, registering a CAGR of 1.30%. In value terms, the market would grow at a CAGR of 3.8% from QAR226.6mn in 2015 to reach QAR329.1mn in 2026.

Chart 43. Qatar's Pre-fabricated Private Units Demand Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

4.1.2.2. Trade Analysis

4.1.2.2.1. Historical Trade Analysis

Imports increased from 4,305sqm (QAR2.5mn) in 2001 to 61,084sqm (QAR51.0mn) in 2006. Thereon, imports have been irregular, rising and falling in alternate years to reach 39,480sqm (QAR23.84mn) in 2015. The declining prices of steel along with fierce price competition in the market led to a sharp decline in import value post 2012, declining from QAR70.5mn in 2012 to QAR23.8mn in 2015.

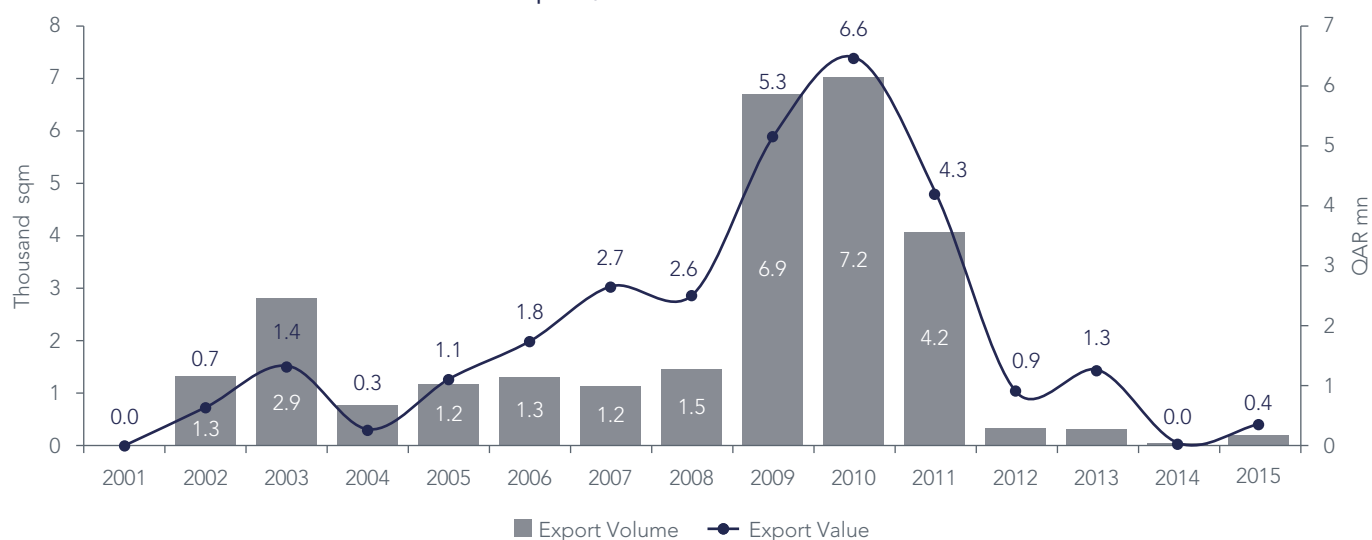
Chart 44. Qatar's Pre-fabricated Private Units Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: Analysis of historical export data indicates that exports have been highly irregular and small compared to the domestic production. During 2001 and 2015, the annual exports averaged at 1,946.7sqm of pre-fabricated private units.

Chart 45. Qatar's Pre-fabricated Private Units Exports, 2001 to 2015

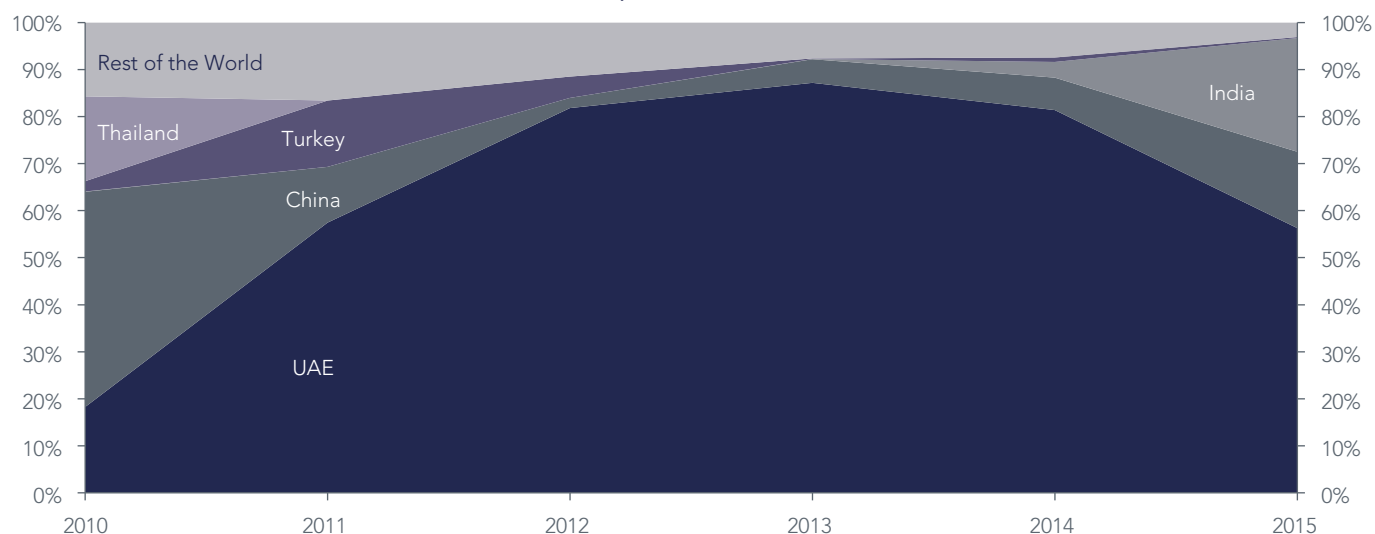


Source: ITC Trademap, Team Analysis

4.1.2.2.2. Trade by Source and Destination

Imports: The analysis of pre-fabricated private units' imports amounting to 195,590sqm from 2010 to 2015 indicates that the UAE (66%), China (13%), India (5%), Turkey (4%) and the US (1%) are the major sources of imports.

Chart 46. Key Sources of Pre-fabricated Private Units Imports, 2010 to 2015

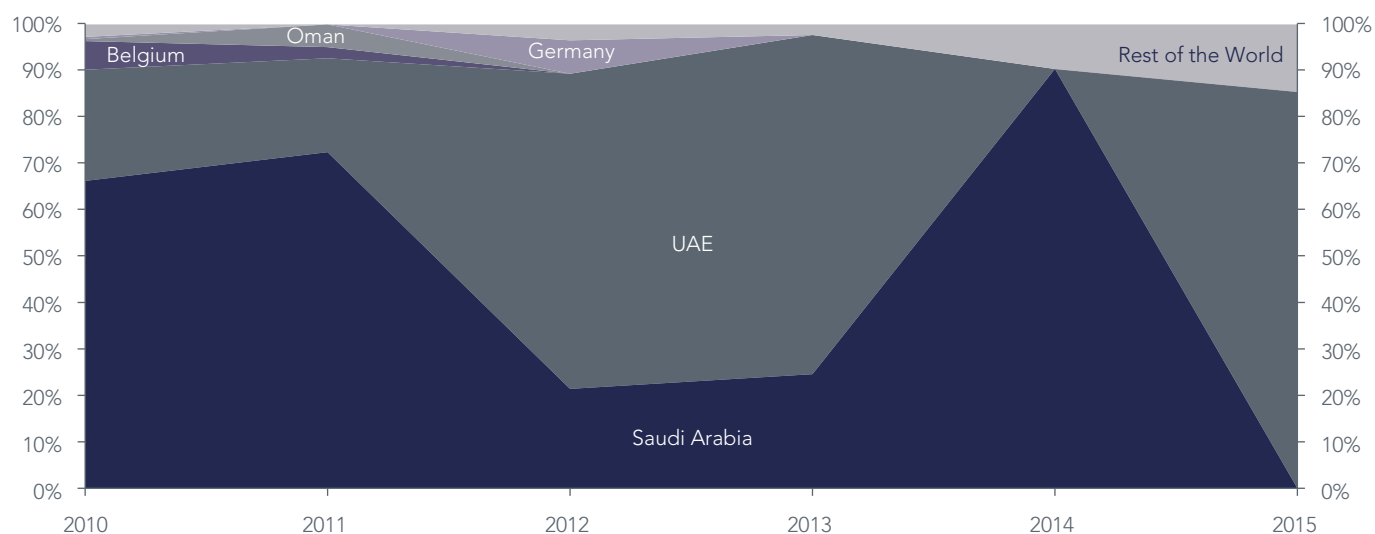


Source: ITC Trademap, Team Analysis

The UAE was the dominant source of imports during 2010 to 2015. Its share in import market peaked at 81.8% in 2013. The share of imports from India and China increased from 2013 to 2015.

Exports: The analysis of pre-fabricated private units exports amounting to 12,209sqm from 2010 to 2015 indicates that the KSA (65%), the UAE (26%), Belgium (4%), Oman (2%) and Germany (0.5%) are the major destinations for exports.

Chart 47. Key Destinations of Pre-fabricated Private Units Exports, 2010 to 2015



Source: ITC Trademap, Team Analysis

Exports from Qatar have been limited and primarily focused on markets such as Saudi Arabia, the UAE and Oman. Some minor quantity of exports was to Belgium and Oman during 2010 to 2012.

4.1.2.2.3. Share of Imports in Domestic Consumption

The share of imports in Qatar's pre-fabricated private units market was in the range of 12% to 13% during 2001 and 2003. Due to the spike in demand in 2006, the share of imports significantly increased to 67% of the market, but declined to the range of 14% to 27% of the market, between 2007 and 2015, with the exception of 2011 when the share of imports increased to 38%. Domestic players had larger market shares during 2007 and 2015.

Chart 48. Qatar's Pre-fabricated Private Units Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

4.1.2.2.4. Assessment of Export Opportunities

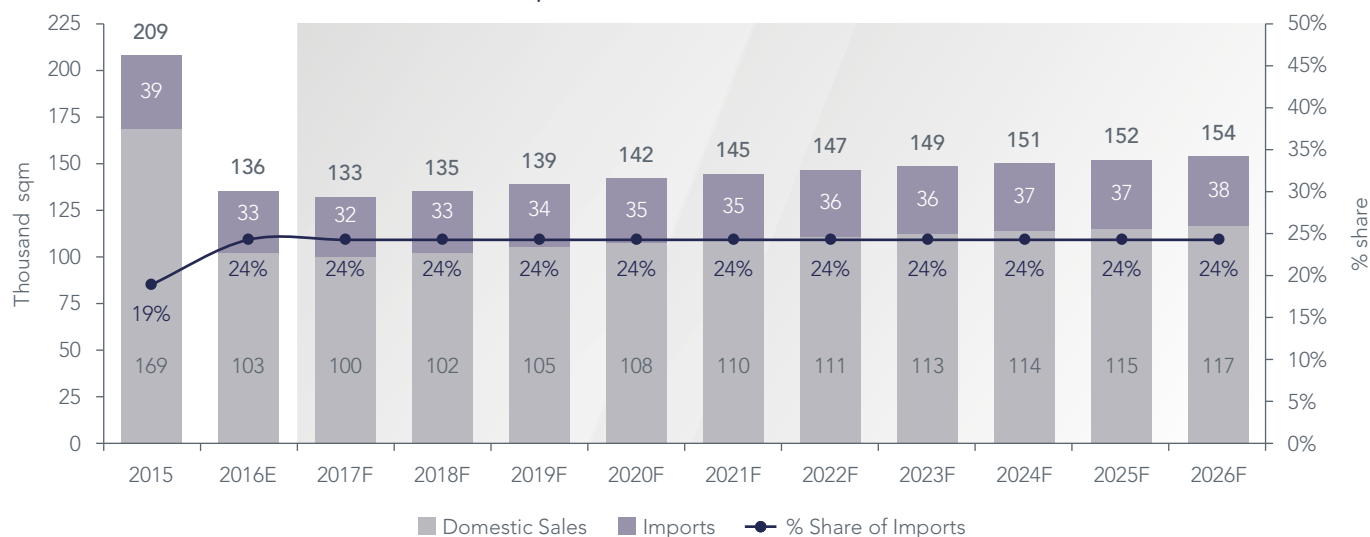
Primary interviews with pre-fabricated building unit manufacturers indicate that, due to high cost of operations, Qatar's production is not cost competitive and hence, pre-fabricated labor accommodation unit manufacturers do not consider the export market as an attractive opportunity. Due to high cost of salaries, rents and raw materials, production cost in Qatar is high as compared to other countries in the GCC region. Analysis of export data indicates that across 2010 to 2015, the exports of pre-fabricated private units averaged at 0.9% of the domestic production.

4.1.2.2.5. Trade Forecast

Imports: The import forecast of pre-fabricated private units indicates that about 24.3% of the market requirements (in quantity terms) will be met by imports. Primary interviews with manufacturers of pre-fabricated buildings indicate that imports are 8% to 12% cheaper than domestic production; however, domestic manufacturers with their local expertise and quicker delivery time are expected to capture the bulk of the domestic demand. Imports are likely to range from 32,997sqm in 2016 to 37,506sqm in 2026.



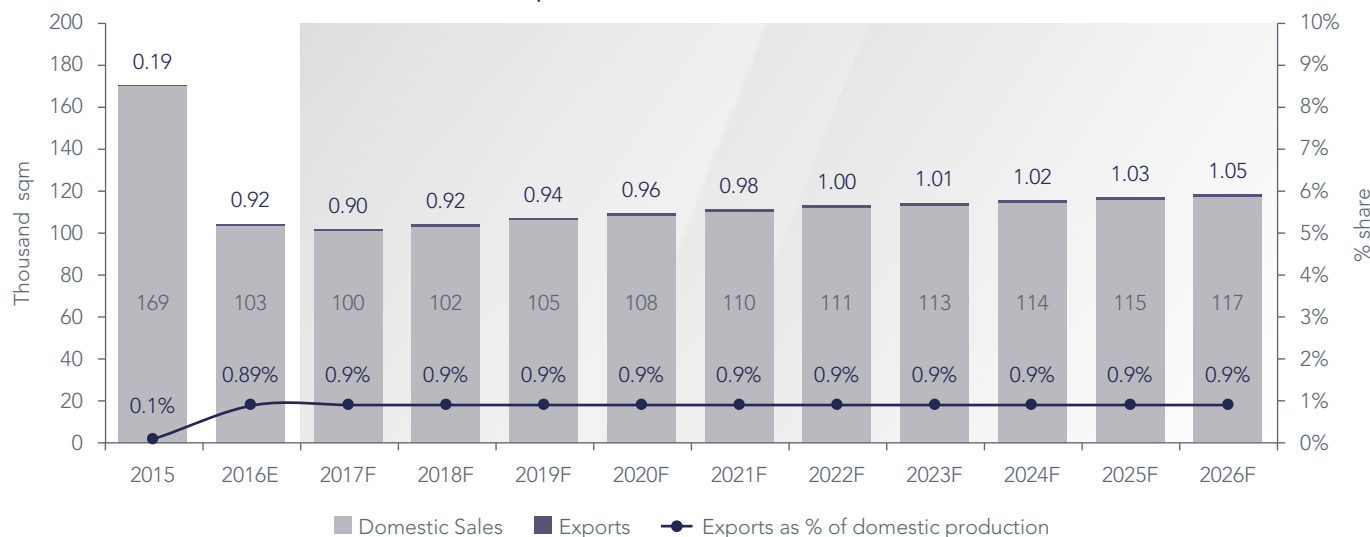
Chart 49. Qatar's Pre-fabricated Private Units Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast of pre-fabricated private units indicates that exports may have a minor opportunity as only 0.9% of the domestic production may be exported, subject to rare opportunities, e.g., Qatar-based manufacturer securing a job order from projects in the KSA or the UAE. Exports are likely to range from 919sqm in 2016 to 1,045sqm in 2026.

Chart 50. Qatar's Pre-fabricated Private Units Export Forecast, 2015 to 2026

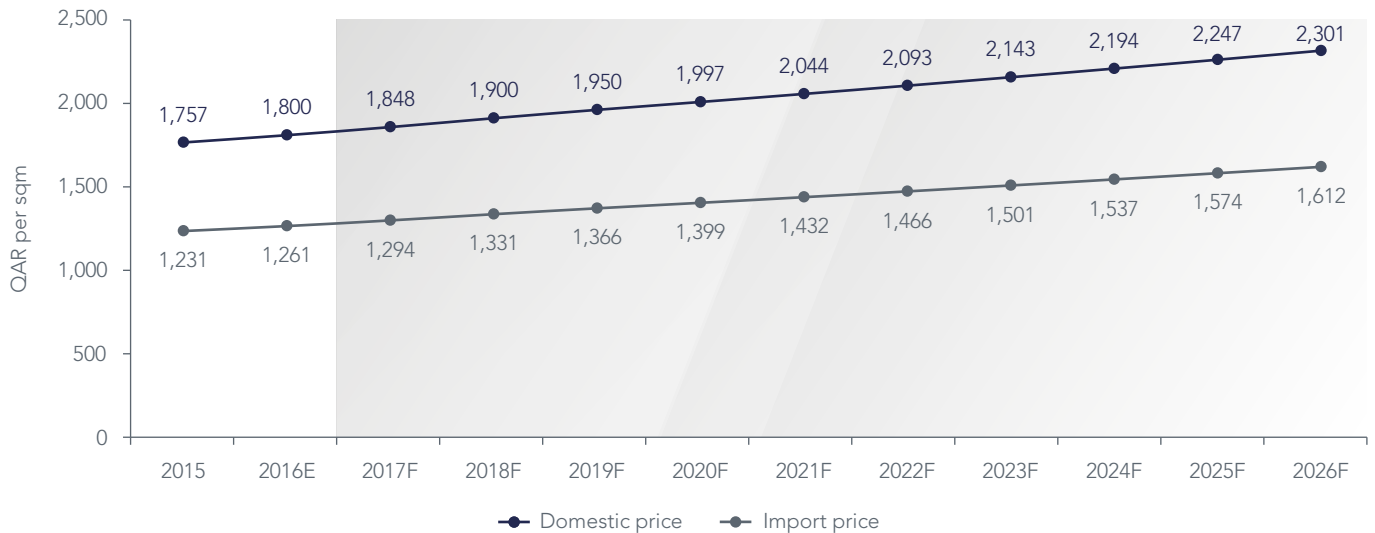


Source: Team Analysis, ITC Trademap

4.1.2.3. Pricing Analysis

Selling prices for pre-fabricated private units are quoted on a per sqm basis and vary as per the size, type of material used for wall construction and flooring, etc. Currently, the 2016 domestic prices are in the range of QAR1,250 to QAR1,900 per sqm (average QAR1,575 per sqm) for site offices, QAR1,650 to 2,800 per sqm (average QAR2,225 per sqm) for mosques, QAR1,000 to QAR 2,200 per sqm (average QAR1,600 per sqm) for majlis and QAR1,200 to QAR 1,800 per sqm (average of QAR1,500 per sqm) for security cabins. On an average, imports are 8% to 12% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR2,301 per sqm in 2026 for domestic production and QAR1,612 per sqm for imports.

Chart 51. Qatar's Pre-fabricated Private Units Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

4.1.3. Pre-fabricated Greenhouse

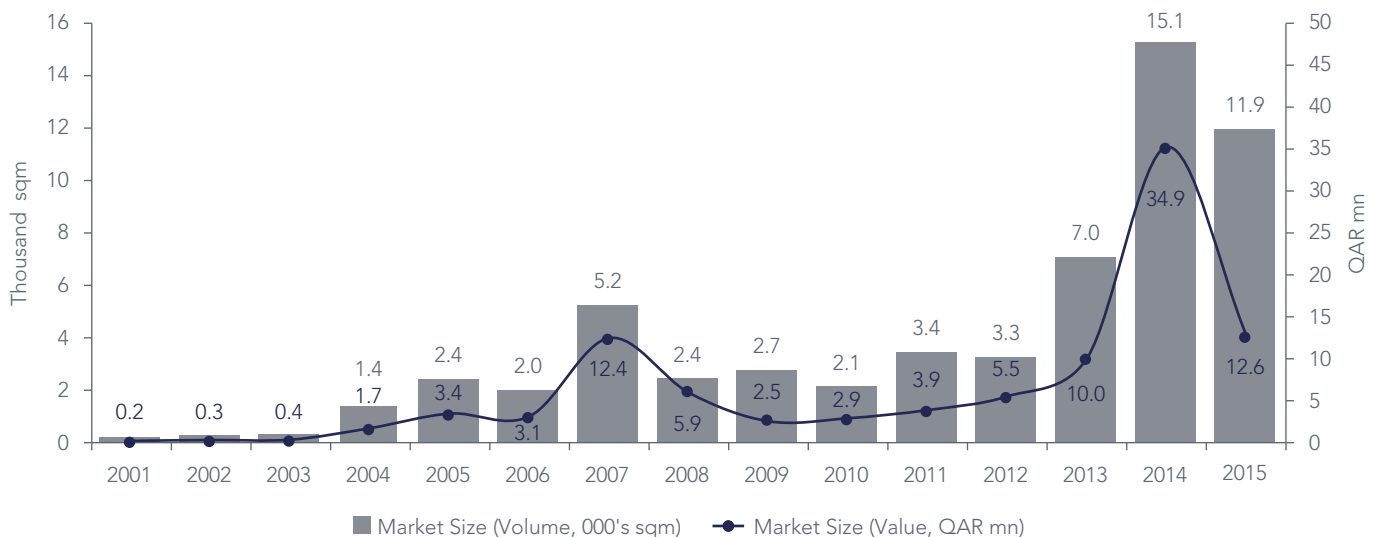
4.1.3.1. Demand-Side Analysis

The market for pre-fabricated greenhouses is relatively small and accounts for 1.6% of the total pre-fabricated buildings market. This sector is serviced by imports since there are no domestic manufacturers specifically focusing on pre-fabricated greenhouses.

4.1.3.1.1. Historical and Current Market Size

There are, currently, no domestic manufacturers of pre-fabricated greenhouses in Qatar, hence the market size is represented entirely by imports. Between 2001 and 2015, the demand for pre-fabricated greenhouses grew from QAR0.2mn (207sqm) in 2001 to QAR12.4mn (11,855sqm) in 2015, growing at a CAGR of 33.8% in terms of value and 33.5% in terms of volume. The market growth was driven by the setting up of agro-based facilities such as Arab Qatari Agricultural Production Company, which is engaged in the production of cut flowers, ornamental plant production of vegetables and flower seedlings. The market peaked in 2014 to reach QAR34.9mn (15,148sqm).

Chart 52. Qatar's Pre-fabricated Greenhouse Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap

4.1.3.1.2. Demand Drivers

Demand Drivers: The demand for pre-fabricated greenhouses is driven by projects for cultivation of fruits, flowers and vegetables, in line with the Qatar government's strategy to enhance the food security of the country, set forth in Qatar National Vision 2030.

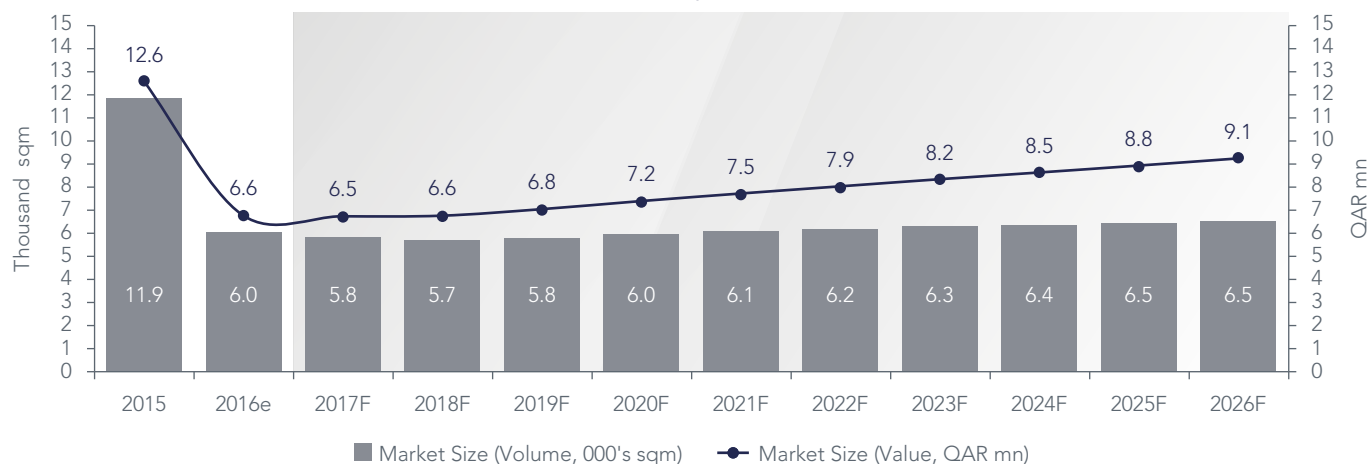
Customer Segment: Civil contractors undertaking construction of greenhouse projects are the customer segment.

Key Influencers: Architects can influence the decision on selection of pre-fabricated private units. Manufacturers of pre-fabricated buildings have to be listed as an approved vendor with the civil contractors.

4.1.3.1.3. Demand Forecast

The market for pre-fabricated greenhouses is expected to grow from 6,041sqm in 2016 to an estimated 6,532sqm in 2026, registering a CAGR of 0.78%. In value terms, the market is expected to grow at a CAGR of 3.3% from QAR6.6mn in 2015 to reach QAR9.1mn in 2026.

Chart 53. Qatar's Pre-fabricated Greenhouse Demand Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

4.1.3.2. Trade Analysis

4.1.3.2.1. Historical Trade Analysis

Imports: This increased from 207sqm (QAR0.21mn) in 2001 to 5,211sqm (QAR12.4mn) in 2007. Thereon, imports have been irregular, rising and falling in alternate years to reach 11,855sqm (QAR12.6mn) in 2015.

Chart 54. Qatar's Pre-fabricated Greenhouse Imports, 2001 to 2015

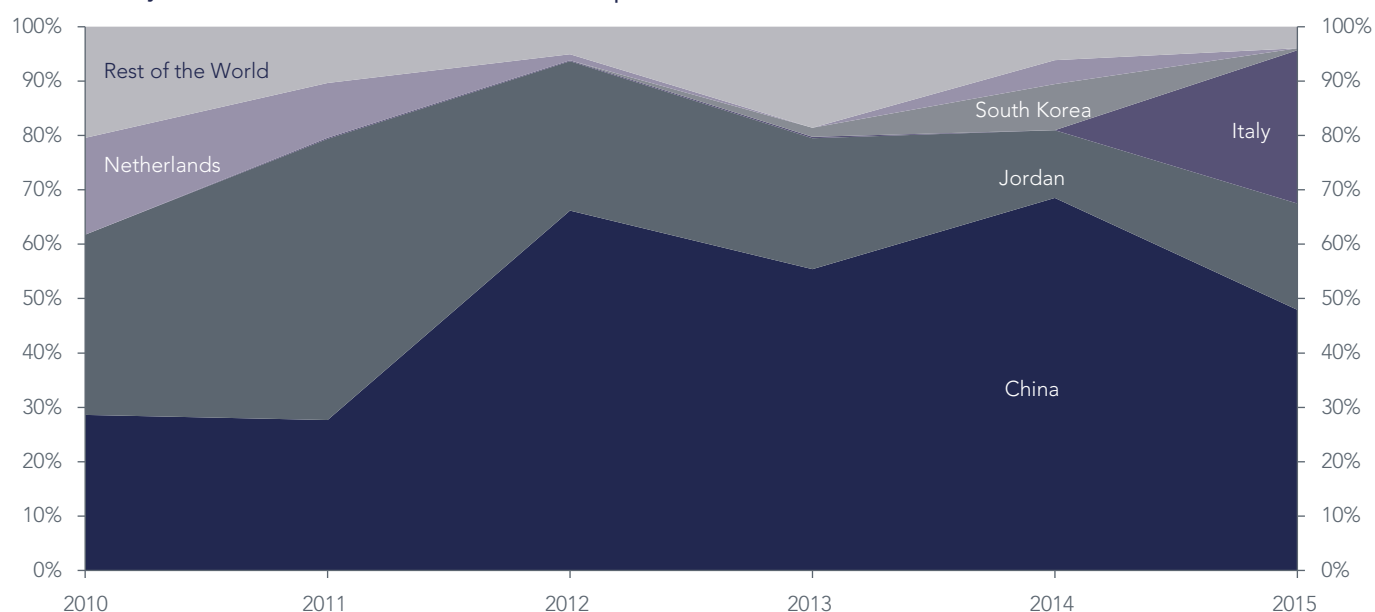


Source: ITC Trademap, Team Analysis

4.1.3.2.2. Trade by Source and Destination

Imports: The analysis of pre-fabricated greenhouse imports amounting to 42,849 sqm from 2010 to 2015 indicates that the China (55%), Jordan (22%), Italy (8%), Korea (3%) and Netherlands (3%) are the major sources of imports.

Chart 55. Key Sources of Pre-fabricated Greenhouse Imports, 2010 to 2015



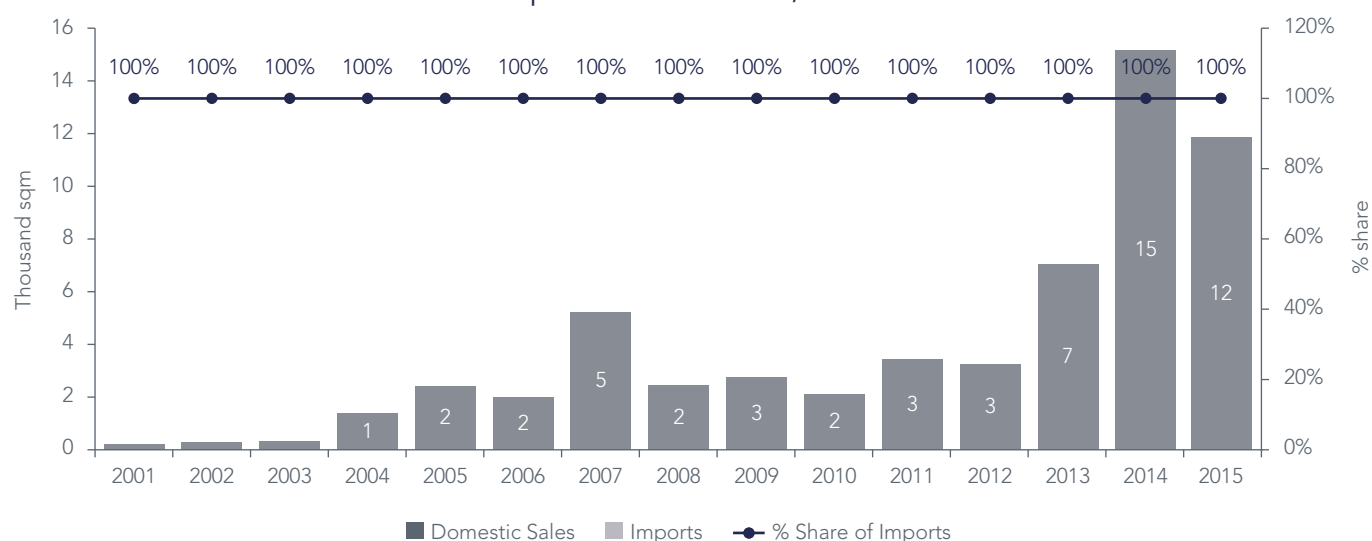
Source: ITC Trademap, Team Analysis

Chinese greenhouses, followed by Jordanian imports, dominated the import market in Qatar during 2010 to 2015. In the recent past, Italian products have made a headway into Qatar market with South Korea and the Netherlands having minor shares.

4.1.3.2.3. Share of Imports in Domestic Consumption

Due to lack of domestic manufacturing of pre-fabricated greenhouses, the share of imports has been 100% throughout.

Chart 56. Qatar's Pre-fabricated Greenhouse Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

4.1.3.2.4. Assessment of Export Opportunities

Due to lack of domestic manufacturing of pre-fabricated greenhouses, there are no potential export opportunities. The domestic market for pre-fabricated greenhouses is small in size to warrant the establishment of a new facility catering entirely to this segment. Primary interviews with domestic manufacturers indicate that apart from small volumes, import prices are difficult to compete with, hence none of the local manufacturers currently cater to this segment.

4.1.3.2.5. Trade Forecast

Imports: The import forecast of pre-fabricated greenhouses indicates that 100% of the markets requirement (in quantity terms) will be met by imports. Imports are likely to range from 6,041 sqm in 2016 to 6,532 sqm in 2026.

Chart 57. Qatar's Pre-fabricated Greenhouse Import Forecast, 2015 to 2026

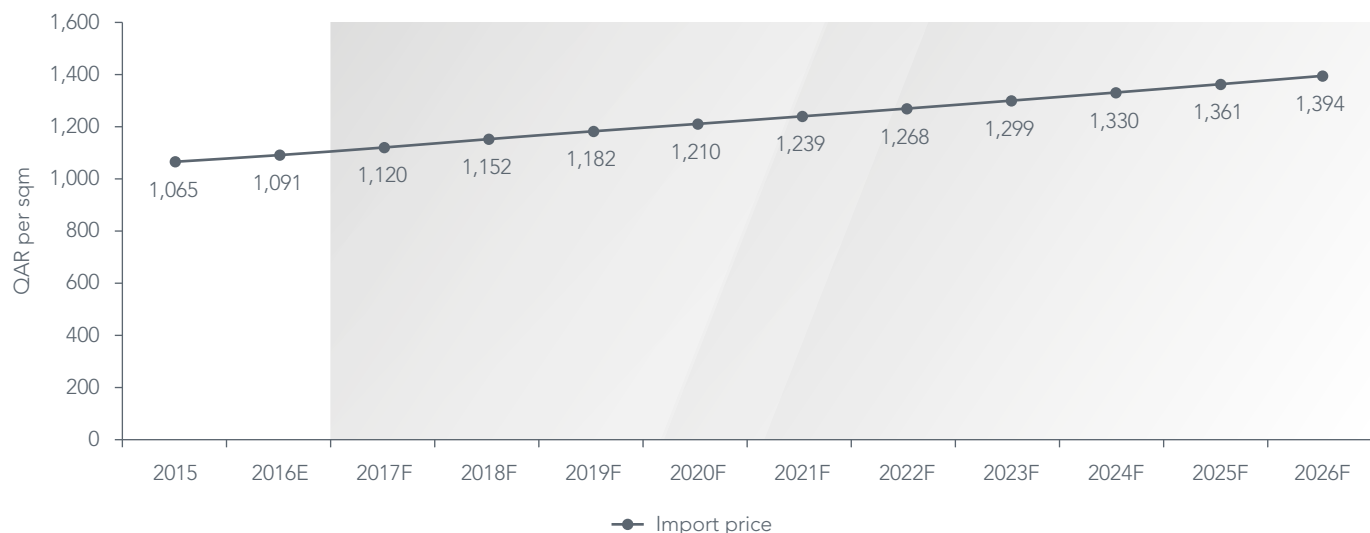


Source: Team Analysis, ITC Trademap

4.1.3.3. Pricing Analysis

Import prices for pre-fabricated greenhouses are in the range of QAR 1,000 to 1,200 per sqm. Considering the inflation rates in Qatar, prices average prices are expected to reach QAR1,394 per sqm in 2026.

Chart 58. Qatar's Pre-fabricated Greenhouse Selling Prices Forecast, 2015 to 2026



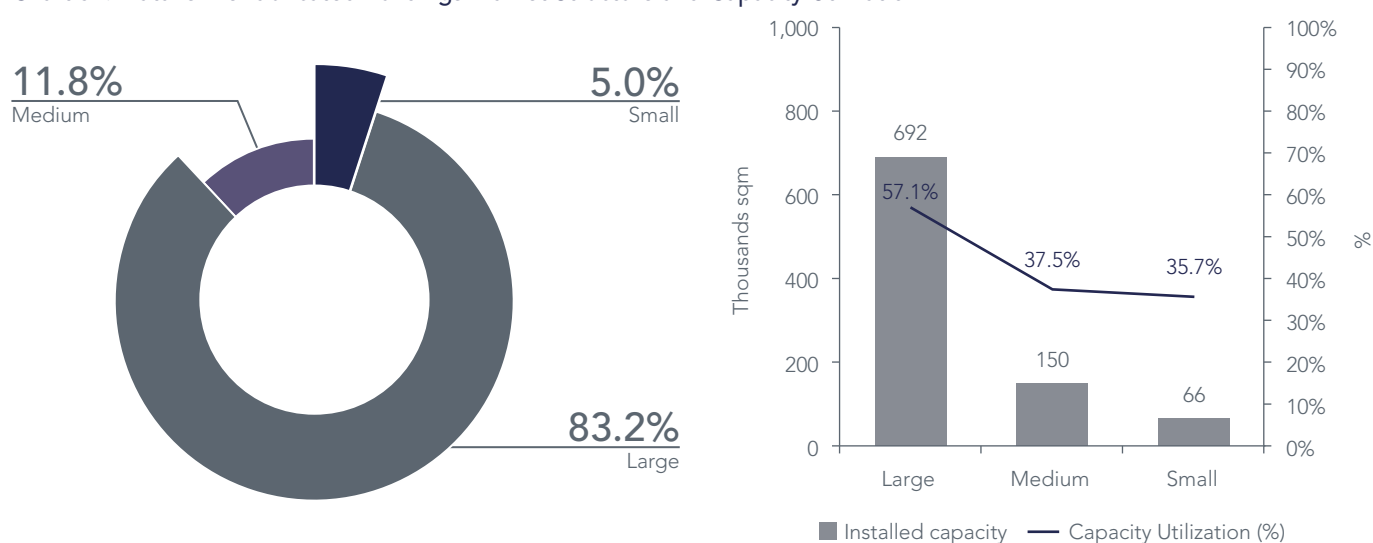
Source: Team Analysis, ITC Trademap

4.1.4. Supply-Side Analysis

4.1.4.1. Market Structure

Qatar is home to about 20 firms operating in the pre-fabricated building market. Based on the capacities of the firms, they can be classified as large, medium and small. Most large and medium pre-fabricated buildings firms have capabilities to undertake fabrication all types of pre-fabricated buildings (labor accommodation, private units, etc.), while small firms focus on construction of private units such as site offices, security cabins, mosques and majlis.

Chart 59. Qatar's Pre-fabricated Buildings Market Structure and Capacity Utilization



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

Small-sized Firms



Based on the insights from primary interviews with manufacturers of pre-fabricated buildings, these firms have an installed capacity of 6,000sqm per annum or less, with less than 10 employees and capacity utilization of about 35.7%⁶⁸. The small companies mainly focus on the construction of site offices, security cabins, mosques and majlis. Qatar has 11 such firms that collectively control 5.0% share of the total sales by domestic firms.

Large-sized Firms



Qatar's top-4 leading firms form the group of large-sized firms. In terms of quantity, they collectively hold 83% share of the sales by domestic players. In terms of products and services, the leading players have capabilities to manufacture all types of pre-fabricated buildings but focus on large volume segments such as labor accommodations, site offices and security cabins.

Medium-sized Firms



There are five medium-sized firms, each having an average installed capacity of greater than 6,000sqm per annum and less than 180,000sqm per annum. The medium-sized firms collectively hold 11.8% share of the market in volume terms and their average capacity utilization is 37.5%.



⁶⁸ Primary Interviews

Table 13. Pre-fabricated Buildings Market Structure Snapshot

Structural Steel Fabrication	Units	Large	Medium	Small	Total
Number of players	Number	4.0	5.0	11.0	20
Capacity in sqm per month	sqm	14,410	2,500	500	
Total capacity p.a.	sqm	691,680	150,000	66,000	907,680
Sales	sqm	395,000	56,250	23,560	474,810
Capacity utilisation	%	57.1%	37.5%	35.7%	52.3%
Market share	%	83.2%	11.8%	5.0%	100%

Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

4.1.4.2. Profiling of Key Domestic Players

Table 14. Pre-fabricated Buildings: Key Domestic Players

Company	Year of Establishment	Products	Installed capacity (SQM/P.A)
Spacemaker (Subsidiary of Gulf Contracting Company)	1976	All types of pre-fabricated buildings	300,000
Qatar Prefab (Al Hamadi Group)	1983	All types of pre-fabricated buildings	144,000
Al Wasit Cabins (GETC Group)	1993	All types of pre-fabricated buildings	144,000
Qatar Speed House (Subsidiary of Aal Imran Housing)	2002	All types of pre-fabricated buildings	100,000
ANG Qatar	2005	All types of pre-fabricated buildings	100,000
Aal Imran Housing	1981	All types of pre-fabricated buildings	40,000
Skycool Trading and Contracting	2012	All types of pre-fabricated buildings	40,000

The other players in the market include HydroTech Energy Qatar, Super Cabin, Al Attiyah Caravan Factory, Al Maher Construction & Services, Al Muftah Interiors, Qatar Specialized Engineering & Construction, Steel Cabin Co and Ocean Cross Engineering.

4.1.4.3. Business Model Analysis

The pre-fabricated buildings market is dominated by large players that have the capacity and capability to focus on a varied mix of products, projects and customers. Large players typically target labor accommodations, security cabins and site office segments, which are high volume projects having an average project size of 40,000sqm. Large-sized players are typically backed by their parent companies, which are well-established construction companies, e.g., Spacemaker is a subsidiary of the Gulf Contracting Company while Qatar Prefab is a part of the Al Hamadi Group. This provides the large-sized firms with financial support, local expertise as well as access to major projects across the country.

The small- and medium-sized players also target labor accommodation, security cabins and site office segments; however, they may lack the ability and resources (manpower and machinery) to handle large-scale projects. Hence, they primarily focus on smaller-scale projects with an average project size of 1,000sqm.

Given the low-entry barriers, widespread application of pre-fabricated buildings and a large market size, pre-fabricated buildings has been an attractive sector for Qatari entrepreneurs. The market is competitive with several firms operating in the market and each targeting the same project, the competition to win contracts is intense.

4.1.4.4. Domestic Production Competitiveness

Key factors that influence the competitiveness of the domestic production of pre-fabricated buildings include raw material, labor, market size and impact of competition.

Raw Material: Qatar does not domestically produce raw materials, such as slit coils of galvanized iron. The domestic raw material production capacity is underdeveloped in the country, hence, manufacturers in Qatar depend on imports to meet their raw material needs.

Our primary research indicates that raw materials are procured from the UAE, the KSA, China, India and Turkey. Expensive raw materials significantly impact the cost of domestically produced finished goods.

High Operational Expenses: Our primary interviews indicate that the operational costs are significantly high in Qatar due to higher labor costs and rent than in the nations exporting to Qatar — Kuwait, the UAE, the KSA, India, China, Turkey, etc. This adversely affects the price competitiveness of the domestic production.

Time to Market: According to industry players, procuring raw material is time consuming, which leaves them with little time to fabricate and deliver finished products to customers.

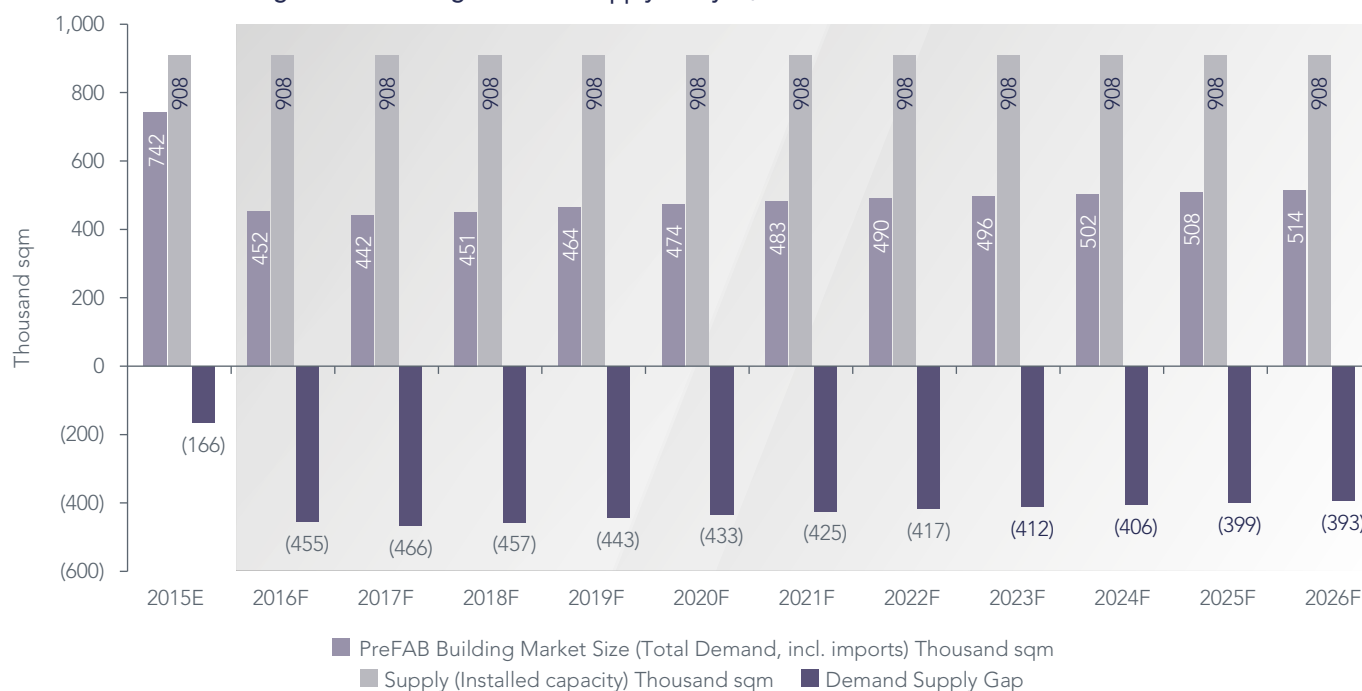
This increases the requirement for raw material inventory since manufacturers either have to procure raw materials in advance, adding to the inventory costs or purchase raw materials at current market rates, which may be higher than the quotations submitted for job works, adversely affecting their price competitiveness.

Number of Players: The pre-fabricated buildings market is well organized with the top-4 players capturing almost 85% of the market. Medium and small players typically target smaller-scale projects than those targeted by the market leaders. The market being oversupplied is characterized by fierce competition and price sensitivity.

4.1.5. Demand–Supply Analysis

Considering the 20 firms operating in the market, the installed capacity is 907,680sqm per annum. This does not include assumptions for new players having plans to enter the market that have not been announced so far. As per market size estimates (including imports projection), the demand–supply gap indicates an oversupply of 433,269sqm in 2020 to 393,363sqm in 2026⁶⁹.

Chart 60. Qatar's Pre-engineered Buildings Demand-Supply Analysis, 2015 to 2026



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015, ITC Trademap

⁶⁹ Team Analysis

4.1.6. Regulatory Analysis

QCS 2014: As pre-fabricated buildings are used in the construction sector, their production, installation and usage are mainly regulated as per the following sections of Qatar Construction Specifications (QCS) 2014:⁷⁰

- a) **QCS 2014 Section 16: Structural steelworks**
This section has general instructions and regulations related to materials, drawing, fabrication, welding, bolting, accuracy of fabrication, erection, accuracy of erected steel work and protected treatment.
- b) **QCS 2014 Section 17: Metal work**
This section has general instructions and regulations related to material classification, metal doors and windows, architectural metalwork, light metal support, cladding support and workmanship.

In addition to the above, steel fabrication units need to be familiar with other relevant sections of the QCS that regulate construction activities having an interface with pre-fabricated buildings. These sections include section 13 (masonry), section 14 (roofing), section 4 (foundation and retaining structures) and section 5 (concrete).

The Ministry of Environment: Pre-fabricated buildings manufacturing units need to be approved by the Ministry of Environment.

Civil Defense Department (Ministry of Interior): All building material products need an approval from the Civil Defense Department (Ministry of Interior) as per Emiri Decree No. 9/2012. Pre-fabricated buildings manufacturing units have to comply with the applicable fire safety norms.

ISO Certification: Obtaining ISO certifications (Quality 9001, OHSAS 18001 and Environment 14,001) are vital for tendering purposes.

Labor Standards: Pre-fabricated labor accommodations in Qatar need to comply with all the government labor standards on minimum space requirements, amenities and other mandatory requirements set by Ashghal, Qatar Foundation, Qatar Rail and Supreme Committee for Delivery and Legacy.

Apart from the above, all prospective entrepreneurs need to follow applicable laws related to company registration, industrial license and obtaining land and building permissions for setting up a pre-fabricated buildings manufacturing facility in Qatar.



⁷⁰Qatar Construction Specifications (QCS) 2014

4.1.7. SWOT Analysis and Michael Porter's Five Forces Model Analysis

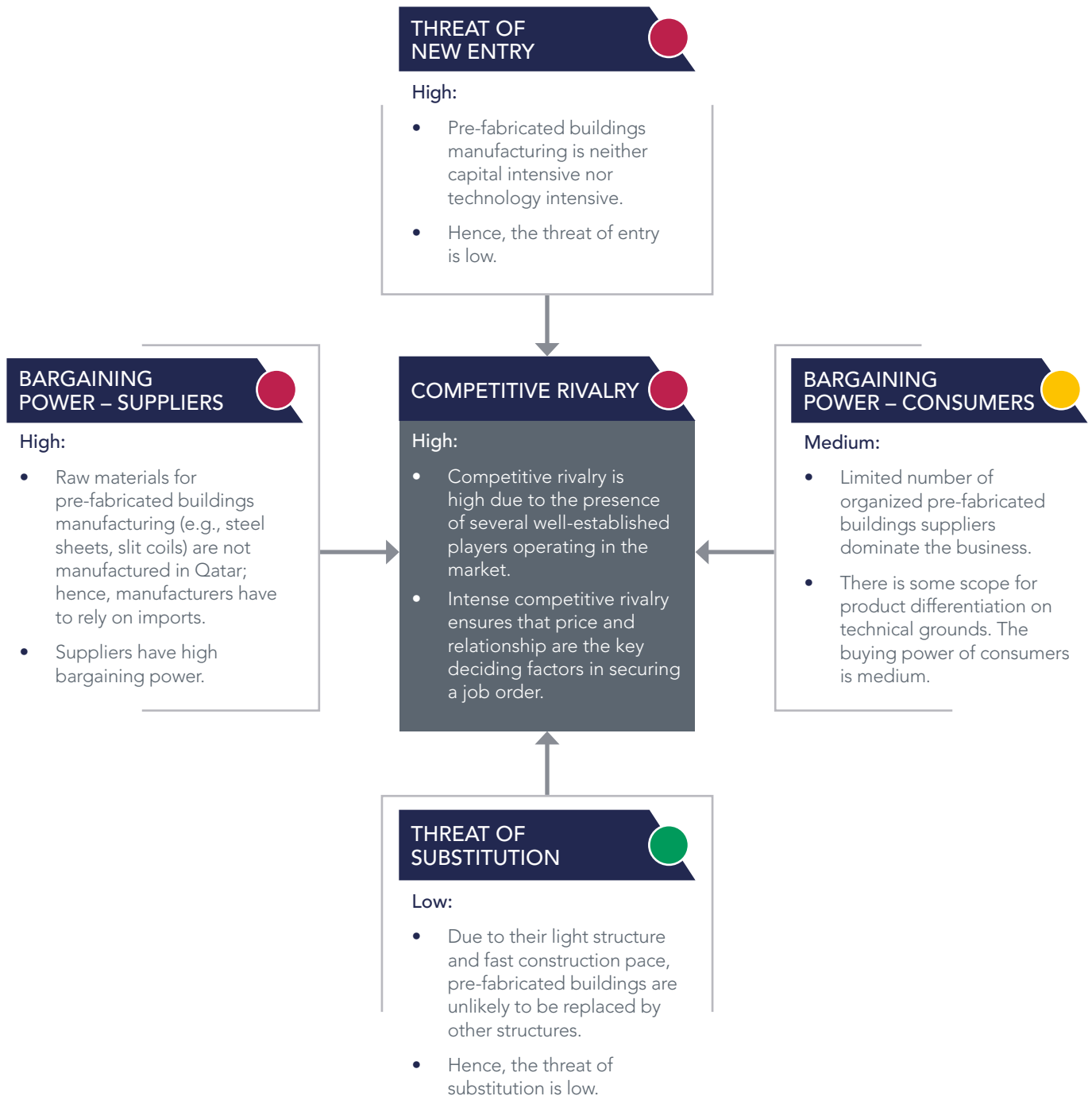
4.1.7.1. SWOT Analysis

Figure 14: Pre-fabricated Buildings SWOT Analysis



4.1.7.2. Michael Porter's Five Forces Model Analysis

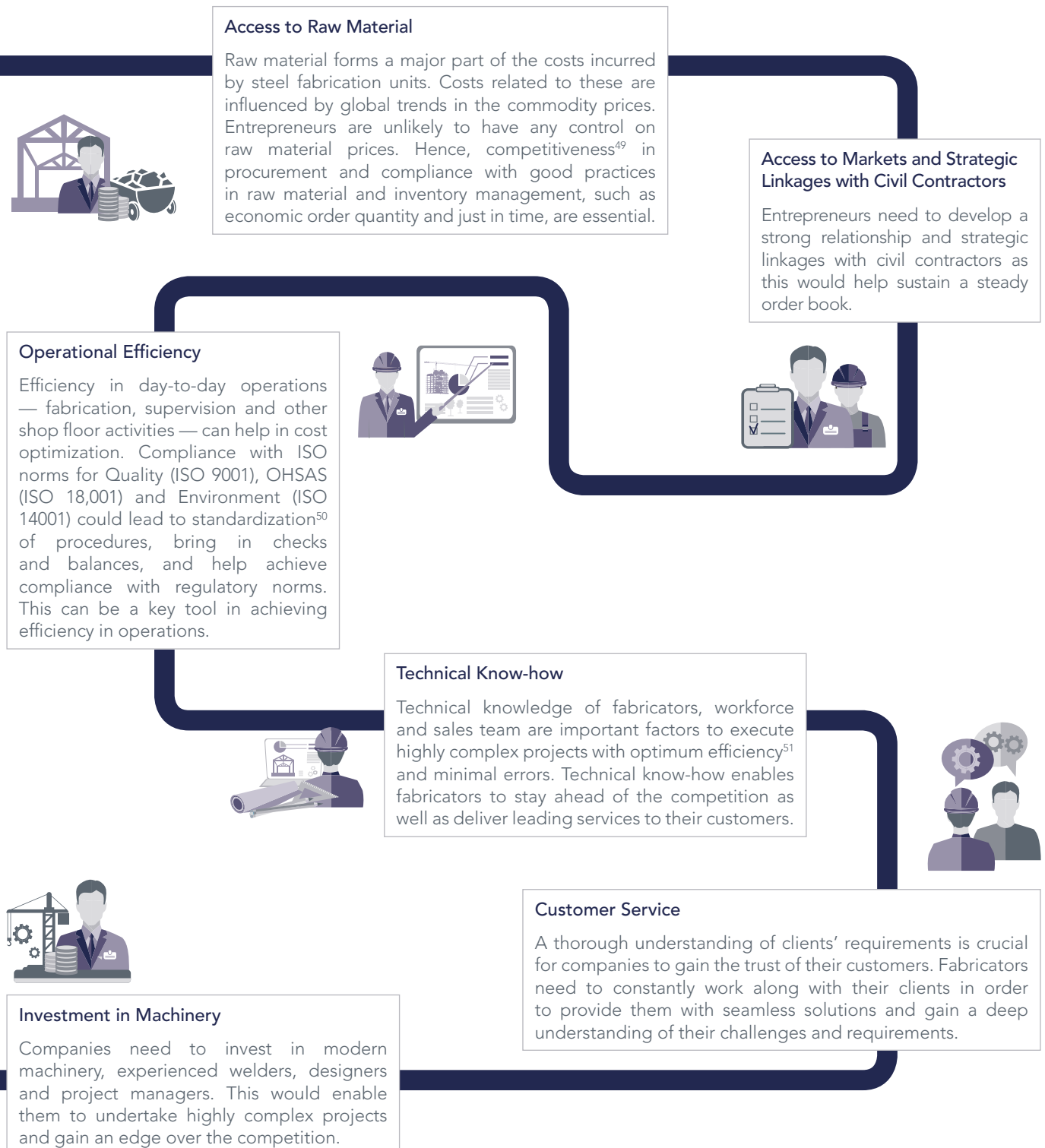
Figure 15: Michael Porter's Five Forces Model (Pre-fabricated Building)

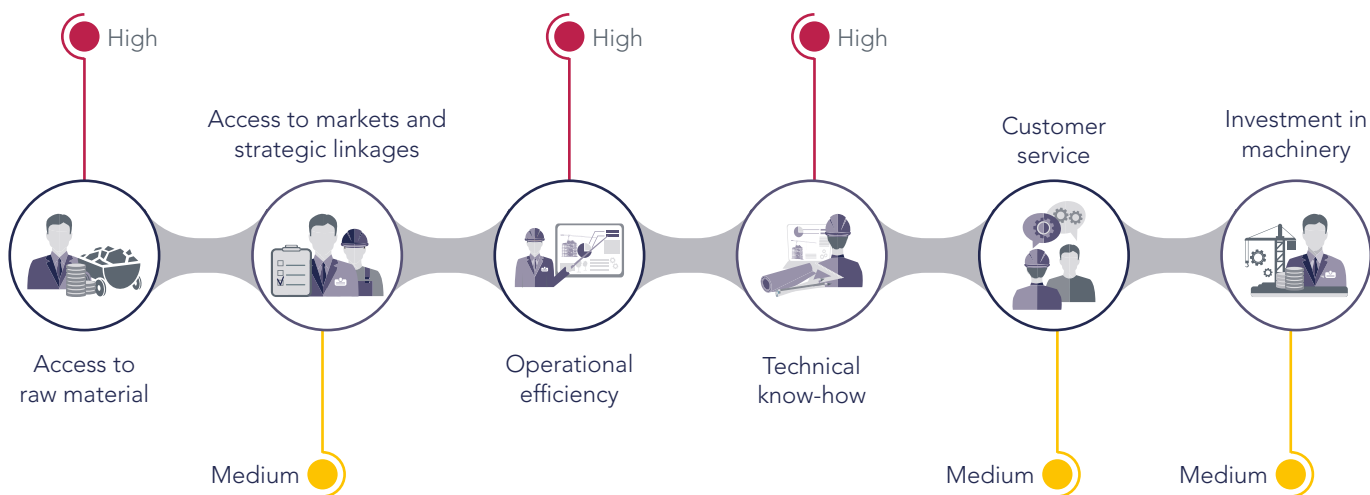


4.2. Critical Success Factors

Following are the critical factors for success:

Figure 16: Critical Success Factors - Pre-fabricated Building





4.3. Outlook

Qatar's pre-fabricated buildings market has witnessed a steady growth, with the demand growing from 262,305sqm (QAR193mn) in 2005 to 753,514sqm (QAR806mn) in 2015, indicating a CAGR 11.1% in volume and 15.4% in value terms.

Large-scale real estate construction and infrastructure development projects for FIFA 2022 World Cup and the Qatar National Vision 2030 are expected to provide a boost to pre-fabricated products, such as labor accommodations, security cabins and site offices.

In the medium to long term, large-scale developments, such as the Qatar rail and metro, New Doha Port Development, SEZs promoted by Manateq, FIFA 2022 stadium, industrial projects and upcoming real estate projects, would drive the demand for pre-fabricated buildings. On the back of the demand drivers, the market is expected to grow at a CAGR of 3.8% from QAR539mn in 2016 to an estimated QAR782mn in 2026.

Pertaining to the challenges, the market is likely to remain competitive and price sensitive. Dependence on imports for procurement of raw materials and higher operational expenses (salaries, rents, etc.) than in other countries, such as the UAE and the KSA, would limit export potential to rare opportunities, i.e., less than 1% of domestic production. Imports are likely to remain cheaper than domestic production and further heighten the challenges. Domestic players have an upper hand in terms of market knowledge, access to projects, support of their well-established parent companies and quicker turnaround time than importers.

The 2016 market size and growth rate of the pre-fabricated buildings segment till 2026 points to an average incremental opportunity of QAR24.4mn (6,231sqm) per annum, for new players to tap into from 2017 to 2026, subject to competitive challenges. As the average incremental business per annum till 2026 is low for offering viable opportunities⁷¹, entrepreneurs would have to focus on being cost competitive to be able to compete and gain market share from established players in the market.

⁷¹ Team Analysis

5. ARCHITECTURAL STEEL FABRICATION

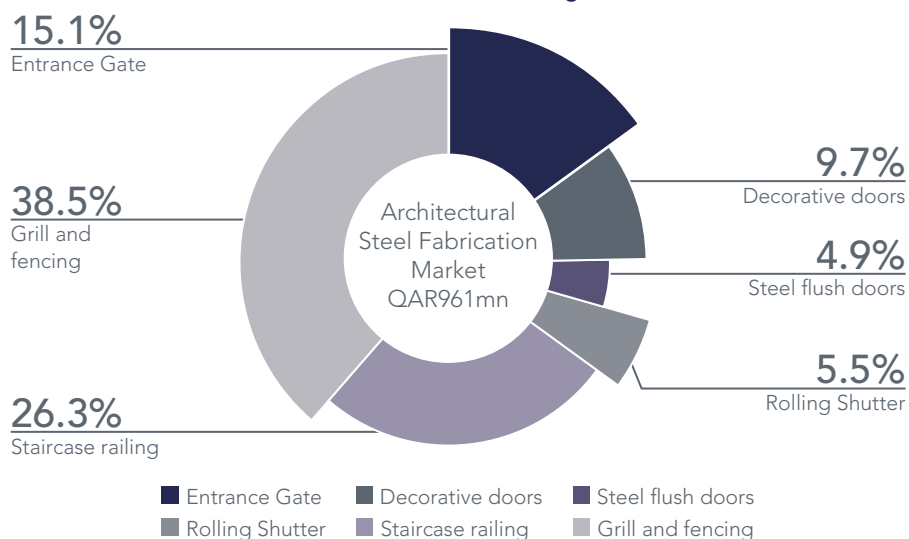
5.1. Qatar Market Overview

Architectural steel fabrication emerges as a significant segment of the structural metal products sector. It serves varied needs of the real estate sector across asset classes such as villas, multi-story buildings, commercial developments, public buildings and industrial facilities.

The architectural steel fabrication market constitutes a sizable portion (12.4%) of the structural metal products sector⁷². In terms of domestic production value, it has 11.7% share of the overall structural metal products sector. Key products in architectural steel fabrication are:

- a) Entrance gates
- b) Decorative doors
- c) Steel flush doors
- d) Rolling shutters
- e) Steel staircase railing
- f) Grills and fencing

Chart 61. Architectural Steel Fabrication Market Segmentation, 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

The 2015 architectural steel fabrication market⁷³ is estimated at QAR961mn. Real estate asset classes, such as villas and multi-story residential developments, are likely to be the prime driver of most architectural products. Key products include grills and fencing (38.5%), steel staircase railing (26.3%), entrance gates (15.1%) and decorative doors (9.7%). Going forward, the market is expected to grow at a CAGR of 3.7% to reach an estimated QAR909mn in 2026.

^{72,73} Team Analysis



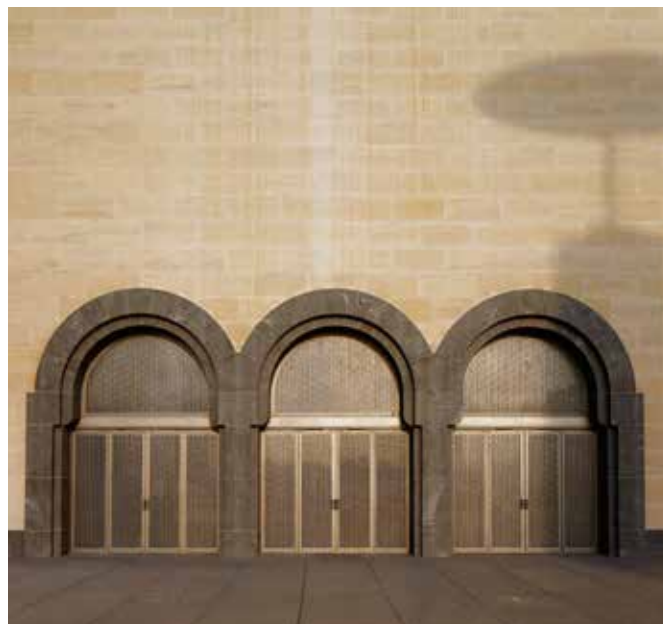
The structure of Qatar's steel fabrication market that comprises 467 firms is fragmented. Most steel fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works. Based on the capacities of the architectural steel fabrication firms, they can be classified as large, medium and small. Medium-sized firms have 70% share of sales by domestic players followed by small-sized players and large-sized layers that have 20% and 10% share, respectively.

The subsequent sections of the report provide a detailed market analysis of each of the products listed above.

5.1.1. Entrance Gates

Entrance gates are the main gates installed along the compound walls of buildings. These serve an important purpose of securing the building and its occupants as well as controlling ingress into the compound premises.

Entrance gates are fabricated from steel sheets, plates, rods and sections. A variety of entrance gates are available in different sizes, shapes, designs, apart from accessories made of other metals, such as brass and aluminum.

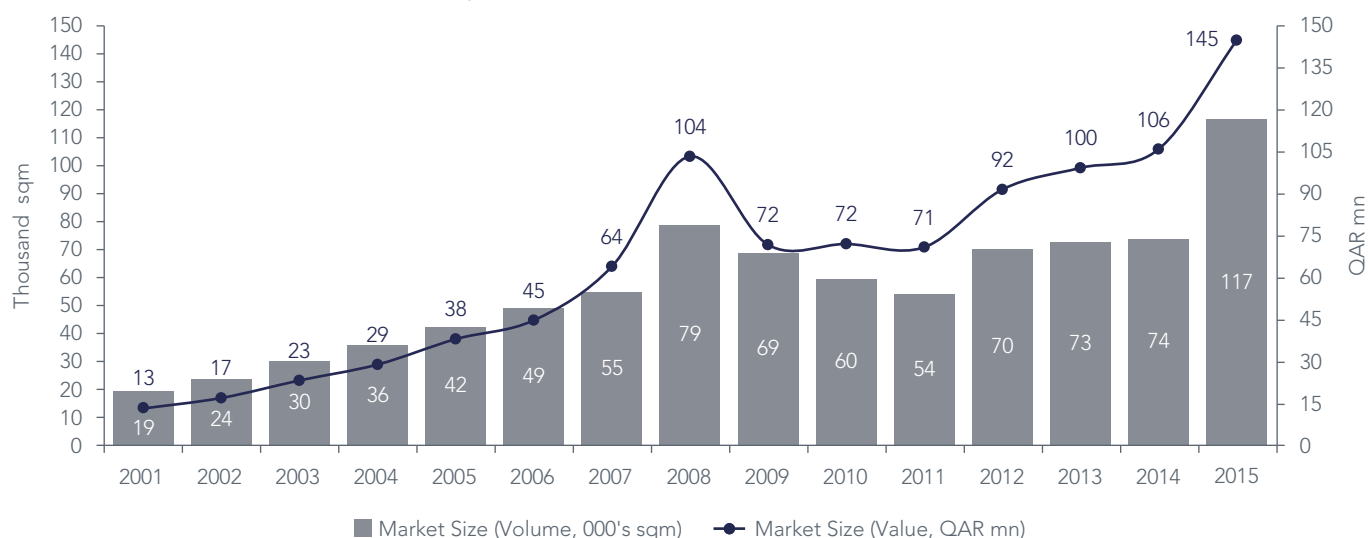


5.1.1.1. Demand-Side Analysis

5.1.1.1.1. Historical and Current Market Size

The market size for entrance gates has followed the real estate development trends. The market size grew from 19,311sqm (QAR13.2) in 2001 to a peak of 78,918sqm (QAR103.6mn) in 2008, implying a CAGR of 22.3%. The slowdown of 2008 and 2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 54,093sqm in 2011. Thereafter, the market recovered and is estimated to have reached 116,836sqm in 2015 (QAR145.2mn).

Chart 62. Qatar's Entrance Gates Demand, 2001 to 2015

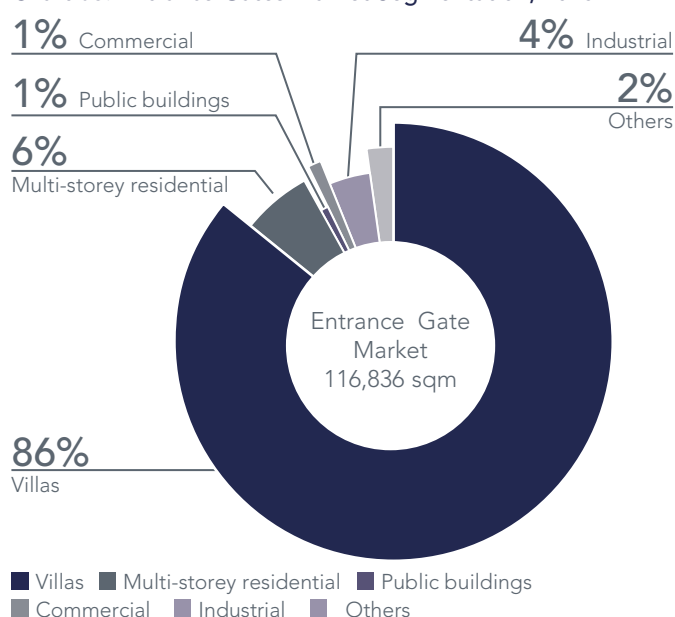


Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

5.1.1.1.2. Market Size Segmentation by Products

Entrance gate for villas is the largest segment accounting for 86% of the demand⁷⁴. Villas constitute 45% of upcoming real estate developments in Qatar and have high consumption rates (sqm of entrance gate consumed per 1,000sqm of built-up area) of entrance gates. Multi-story residential and industrial developments are the next important segments having 6% and 4% of the market share, respectively.

Chart 63. Entrance Gates Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Completed Building Statistics, Primary Interviews

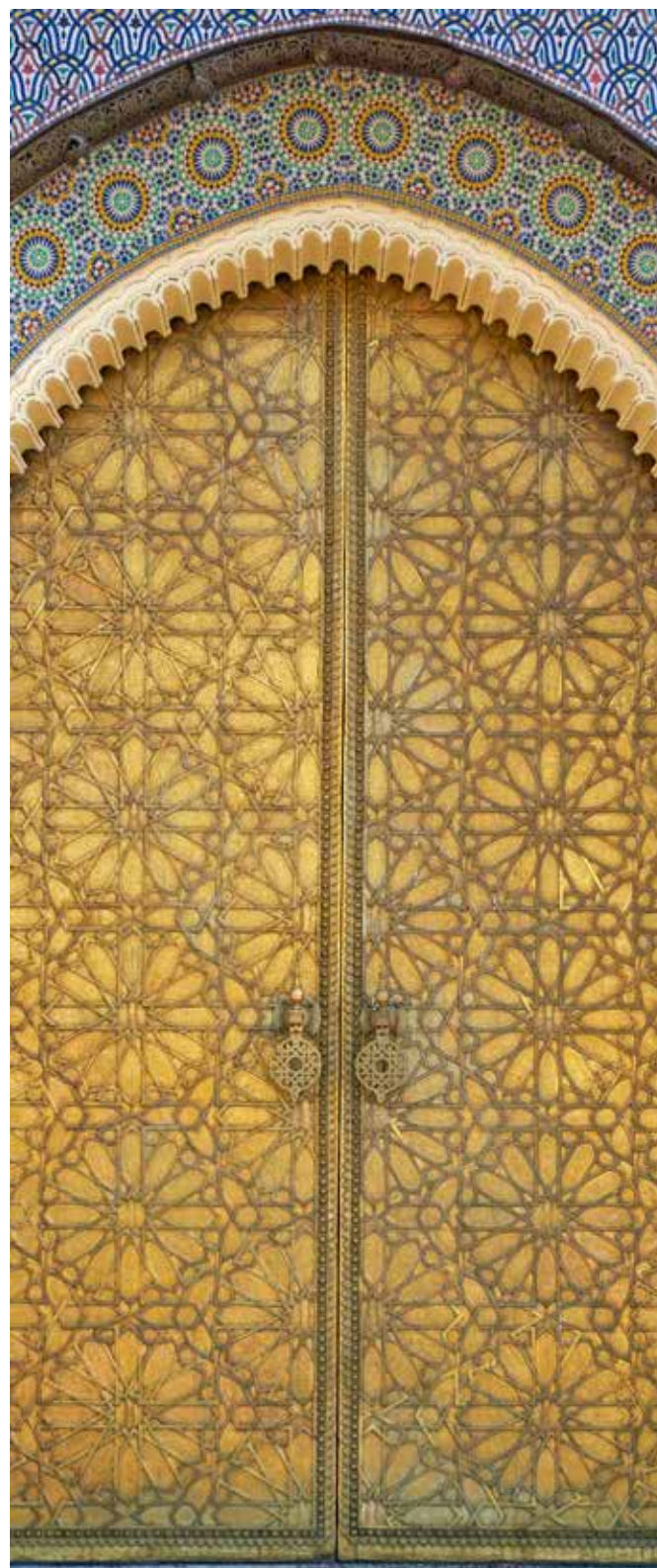
5.1.1.1.3. Demand Drivers

Demand for entrance gates is driven by requirements arising from real estate development projects that include various asset classes, such as villas, multi-story residential buildings, commercial developments, public buildings and industrial facilities. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers who design entrance gates are the key influencers.

5.1.1.1.4. Demand Forecast

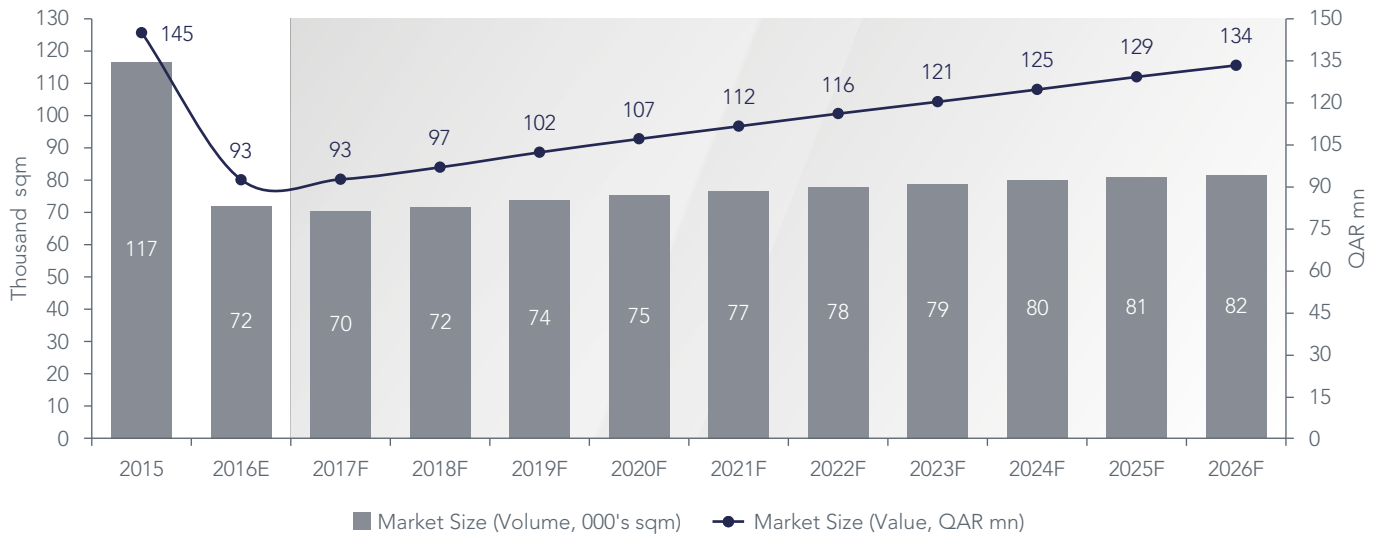
The decline in oil prices in 2014 and 2015 is likely to affect the development of new projects that are either planned or underway. The market size is estimated to have reduced by 38.2% from 116,836sqm in 2015 to 72,205sqm in 2016.

Going forward, the entrance gate market is expected to grow from 72,205sqm in 2016 to an estimated 81,564sqm in 2026⁷⁵, registering a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR93mn in 2015 to reach QAR134mn in 2026.



^{74,75} Team Analysis

Chart 64. Qatar's Entrance Gates Demand Forecast, 2015 to 2026



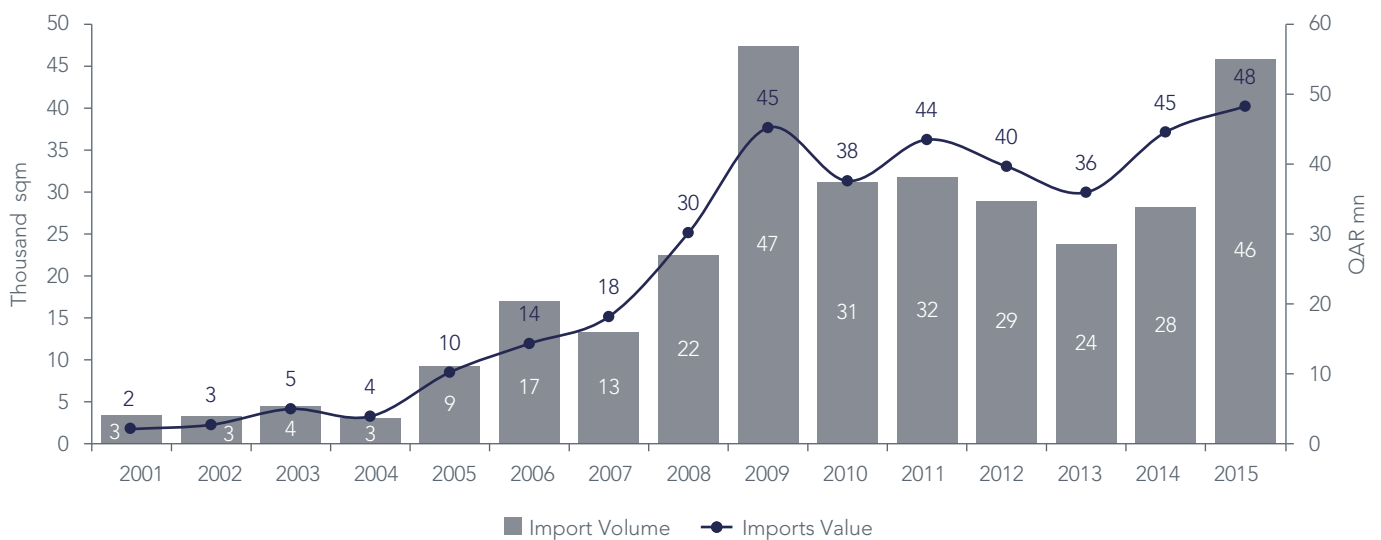
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.1.2. Trade Analysis

5.1.1.2.1. Historical Trade Analysis

Imports: The analysis of historical import data⁷⁶ from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 3,361sqm (QAR2.1mn) in 2001 to 22,491sqm (QAR30.2mn) in 2008. Imports more than doubled to 47,442sqm (QAR45mn) in 2009, when due to slowdown, inexpensive imports were preferred over domestic production. Thenceforth, imports fell during 2010 and 2014 and again gained preference (45,889sqm, QAR48.3mn) in 2015.

Chart 65. Qatar's Entrance Gates Imports, 2001 to 2015

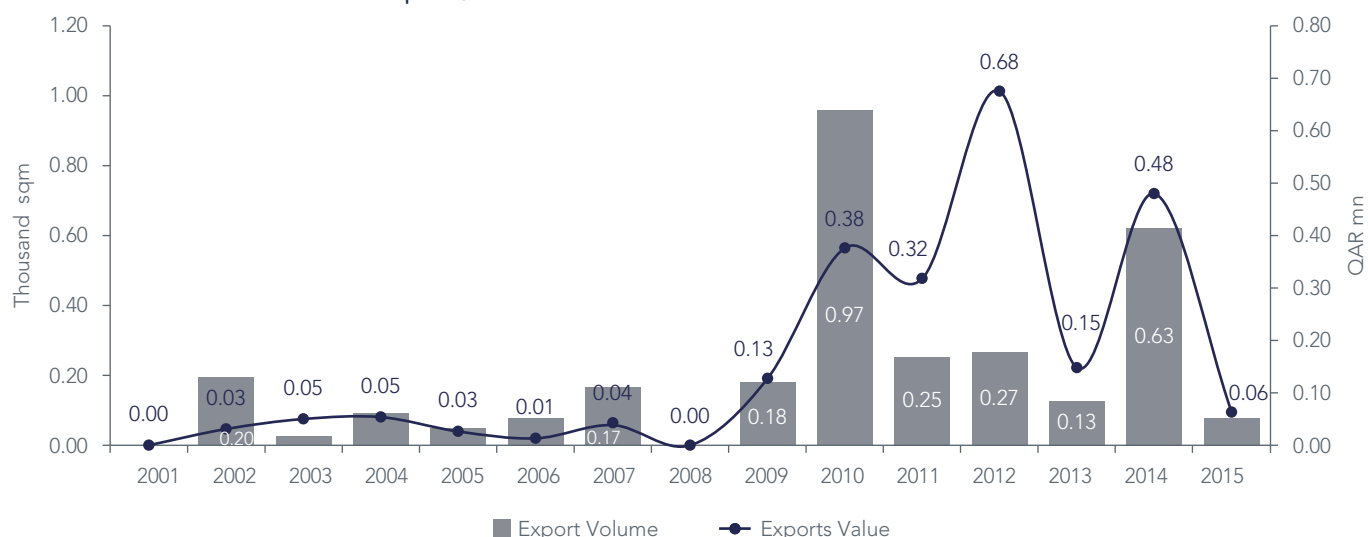


Source: ITC Trademap, Team Analysis

⁷⁶ Team Analysis

Exports: The analysis of historical export data⁷⁷ indicates that exports have been very irregular and very small as compared to the domestic production. During 2001 and 2015, annual exports averaged at 207sqm of entrance gates.

Chart 66. Qatar's Entrance Gates Exports, 2001 to 2015

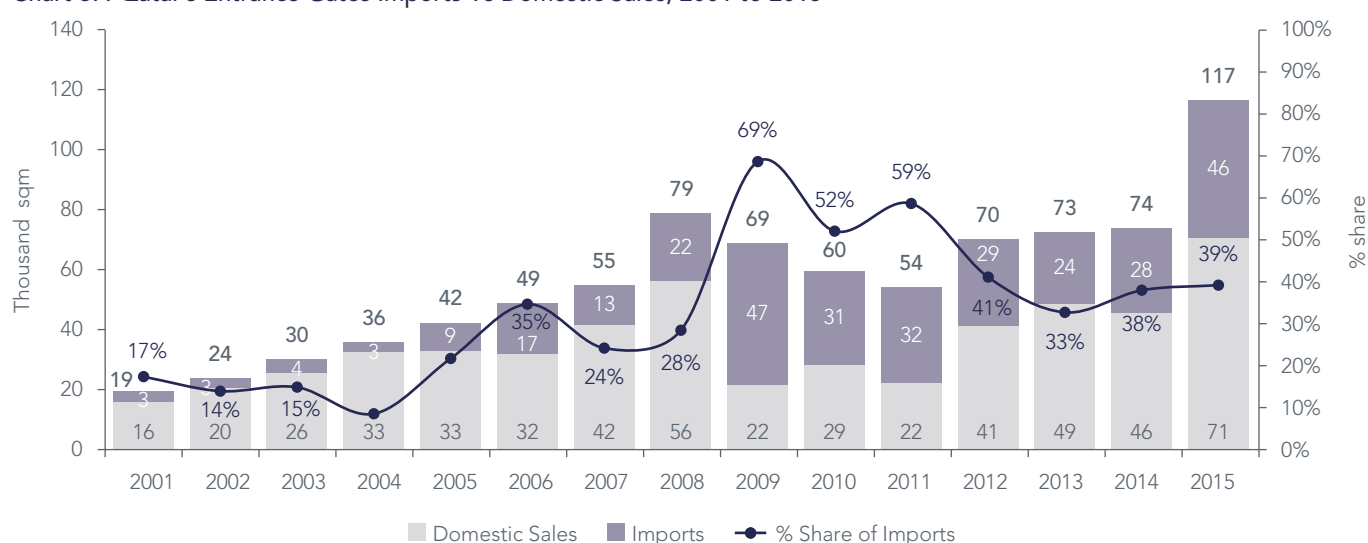


Source: ITC Trademap, Team Analysis

5.1.1.2.2. Share of Imports in Domestic Consumption

The share of imports in Qatar's entrance gate market grew from 17% in 2001 to 28% in 2008⁷⁸. After the global economic crisis of 2008 to 2009, the share of imports further grew to reach 52% to 69% during 2009 and 2011, due to a preference for inexpensive imports. As the economy recovered, the share of imports reduced in during 2012 and 2014 and reached 39% in 2015. On an average, during 2001 and 2015, 36.8% of the market was serviced by imports.

Chart 67. Qatar's Entrance Gates Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

^{77, 78} Team Analysis

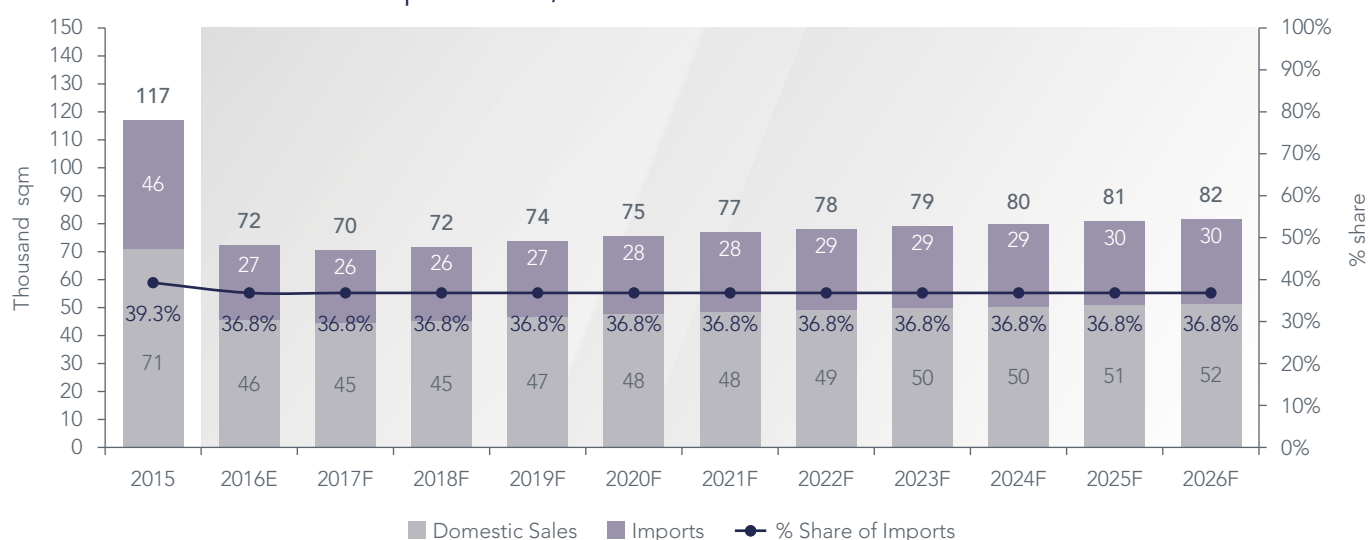
5.1.1.2.3. Assessment of Export Opportunities

Primary interviews with architectural steel fabrication units indicate that, due to the high cost of operations, Qatar's production is not cost competitive and hence architectural steel fabrication units do not consider the export of entrance gates an attractive opportunity. Due to high salaries, rents and cost of raw material, production cost in Qatar is higher than in other countries in the GCC region. The analysis of export data indicates that during 2001 to 2015⁷⁹, the exports of entrance gates were only 0.58% of domestic production.

5.1.1.2.4. Trade Forecast

Imports: The import forecast of entrance gates indicates that about 36.8% of the market requirements (in quantity terms) will be met by imports⁸⁰. Primary interviews indicate that imports are about 20% to 30% cheaper than domestic production. Imports are likely to range from 26,605sqm in 2016 to 30,054sqm in 2026.

Chart 68. Qatar's Entrance Gates Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast⁸¹ of entrance gates indicates that exports may have a minor opportunity as only 0.58% domestic production may be exported, subject to rare opportunities, e.g., a Qatari customer choosing to build a villa in the KSA and sourcing⁸² from Qatar-based fabricators. Exports are likely to range from 264sqm in 2016 to 298sqm in 2026.

Chart 69. Qatar's Entrance Gates Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

^{79,81} ITC Trademap Database

^{80,82} Team Analysis

5.1.1.3. Pricing Analysis

The selling prices⁸³ of entrance gates are quoted on the basis of per sqm and vary as per the size, design, color and other specifications. Currently, the 2016 domestic prices⁸⁴ for entrance gates are in the range of QAR700 to QAR2,000 per sqm (average of QAR1,400 per sqm). On an average, imports are 23% cheaper than domestic production. Considering the inflation rates⁶⁹ in Qatar, average prices are expected to reach QAR1,789 per sqm for domestic production and QAR1,377 per sqm for imports in 2026.

Chart 70. Qatar's Entrance Gates Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

5.1.2. Decorative Doors

Decorative doors are the main doors installed at the entrance of villas and also residential buildings. In addition to being used as the main doors, decorative steel doors can be used for majlis and residential buildings. Decorative steel doors secure the villa residents, have an esthetic appeal and control ingress into the villa premises. These doors are fabricated from steel sheets, plates, rods and sections. A variety of decorative steel doors are available in different sizes, shapes, designs, apart from accessories made of other metals, such as brass and aluminum.

Most steel decorative doors have some intricate design patterns attached to the steel rods, giving the door an esthetic appeal. These design patterns are usually painted in golden color and made from cast aluminum.

5.1.2.1. Demand-Side Analysis

5.1.2.1.1. Historical and Current Market Size

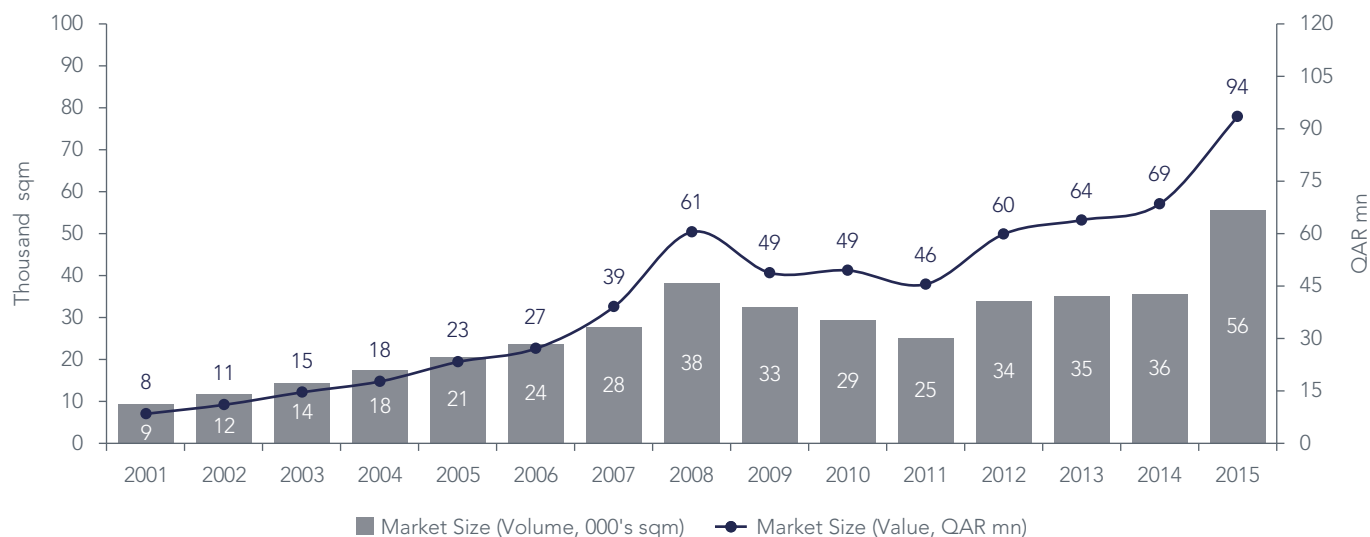
The market size⁷¹ for decorative doors has followed the development trends for villas that mainly drive its demand. The market size grew from 9,385sqm in 2001 (QAR9mn) to a peak of 38,192sqm (QAR61mn) in 2008, implying a CAGR of 22.2%

The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 25,051sqm in 2011. Thereafter, the market recovered and is estimated to have reached 55,662sqm (QAR94mn) in 2015.

^{83,84} ITC Trademap Database



Chart 71. Qatar's Decorative Doors Demand, 2001 to 2015

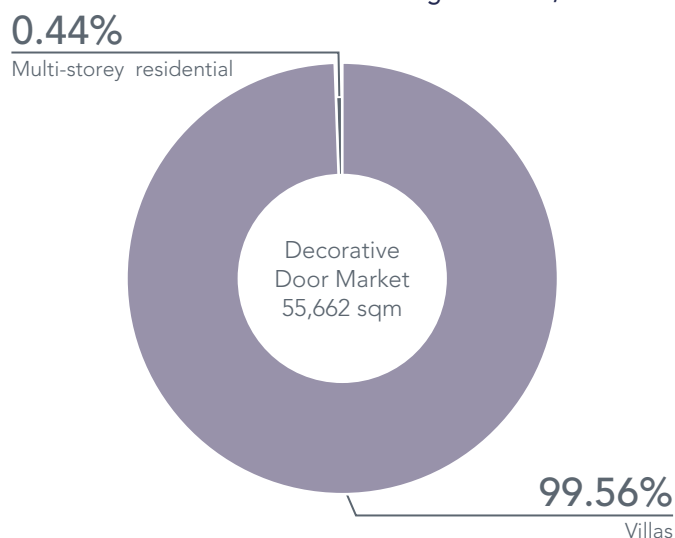


Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.2.1.2. Market Size Segmentation by Products

Decorative door for villas is the largest segment accounting for 99.5% of the demand⁸⁵. Villas constitute 45% of upcoming real estate developments in Qatar and have high consumption rates (sqm of decorative door consumed per 1,000sqm of built-up area) of decorative doors. Some high-end multi-story residential developments may also require decorative doors.

Chart 72. Decorative Doors Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Competed Building Statistics, Primary Interviews

5.1.2.1.3. Demand Drivers

Demand for decorative steel doors is driven by requirements from villas and a few multi-story residential buildings. Other asset classes such as commercial developments, public buildings and industrial facilities are unlikely to require decorative doors. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers who design decorative doors are the key influencers.

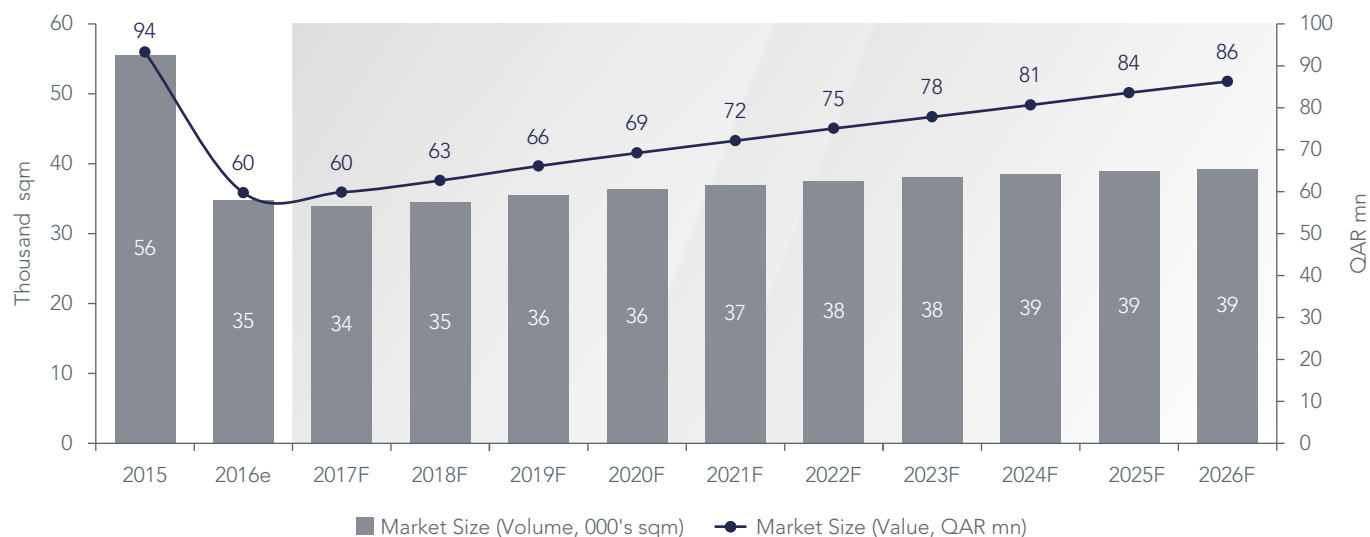
5.1.2.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new villa projects that are either planned or underway. The market size is estimated to have reduced by 37.4% from 55,662sqm in 2015 to 34,845sqm in 2016.

Going forward, the decorative doors market is expected to grow from 34,845sqm in 2016 to an estimated 39,362sqm in 2026⁸⁶, registering a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR60mn in 2016 to reach QAR86mn in 2026.

^{85, 86} Team Analysis

Chart 73. Qatar's Decorative Doors Demand Forecast, 2015 to 2026



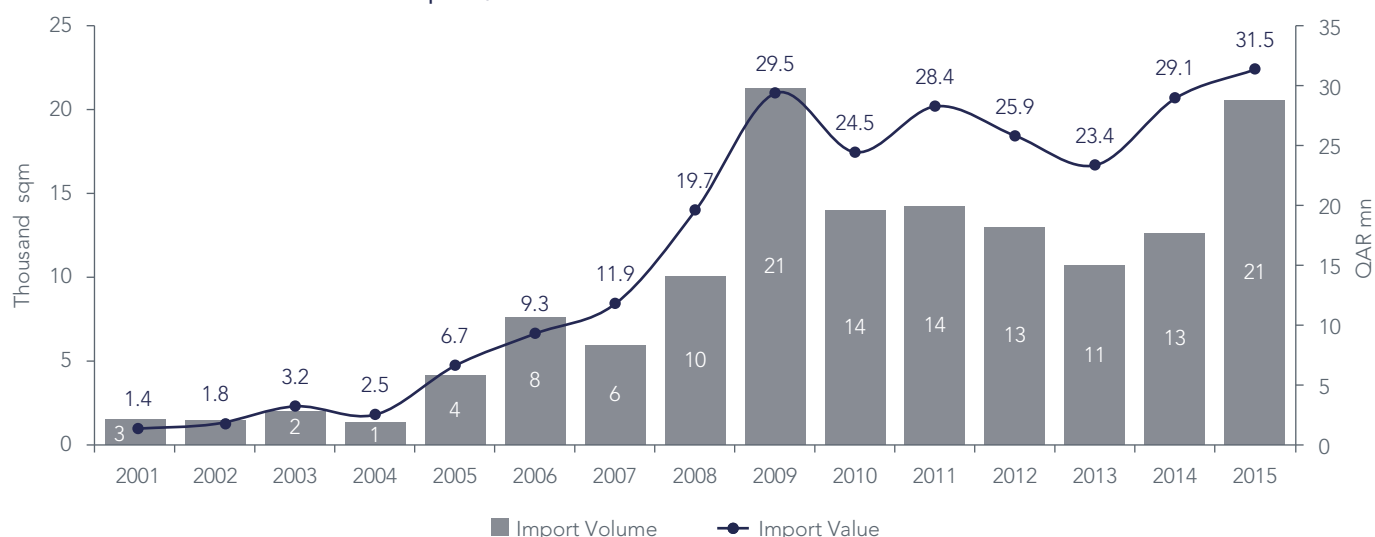
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

5.1.2.2. Trade Analysis

5.1.2.2.1. Historical Trade Analysis

Imports: The analysis of historical import data⁸⁷ from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 1,509sqm in 2001 to 10,098sqm (QAR19.7mn) in 2008. Imports more than doubled to 21,300sqm (QAR29.5mn) in 2009, when due to slowdown, inexpensive imports were preferred over domestic production. Thereafter, imports fell during 2010 to 2014 and again gained preference (20,603sqm, QAR31.5mn) in 2015.

Chart 74. Qatar's Decorative Doors Imports, 2001 to 2015

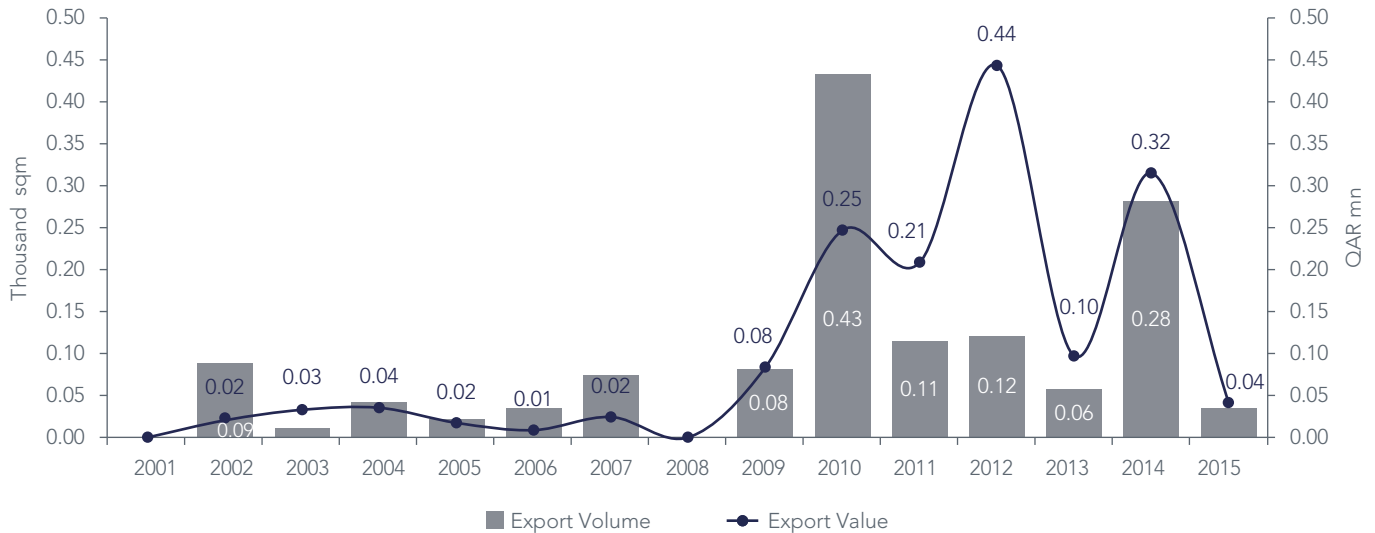


Source: ITC Trademap, Team Analysis

Exports: The analysis of historical export⁸⁸ data indicates that exports have been very irregular and very small as compared to the domestic production. During 2001 and 2015, annual exports averaged at 93sqm of decorative doors.

^{87, 88} ITC Trademap

Chart 75. Qatar's Decorative Doors Exports, 2001 to 2015

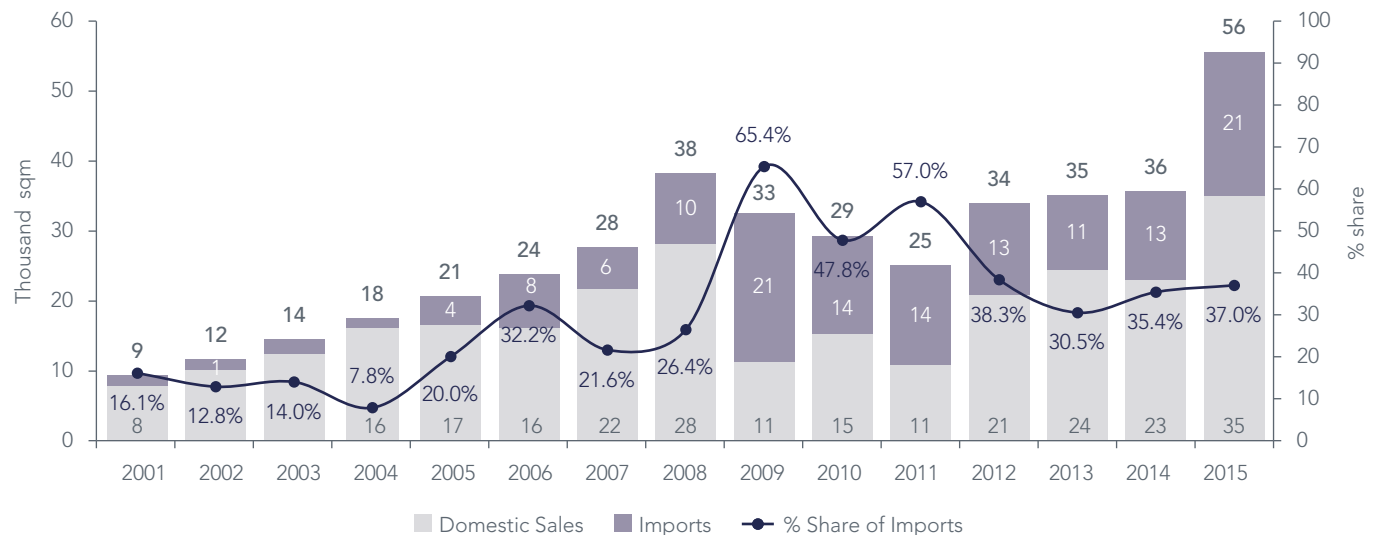


Source: ITC Trademap, Team Analysis

5.1.2.2.2. Share of Imports in Domestic Consumption

The share of imports in Qatar's decorative doors market grew from 16.1% in 2001 to 26.4% in 2008⁸⁹. After the global economic crisis of 2008–2009, the share of imports further grew to reach 57% to 65.4% during 2009 and 2011, due to a preference for inexpensive imports. As the economy recovered, the share of imports reduced in 2012 to 2014 and reached 37% in 2015. On an average, during 2001 and 2015, 34.3% of the market was serviced by imports.

Chart 76. Qatar's Decorative Doors Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

5.1.2.2.3. Assessment of Export Opportunities

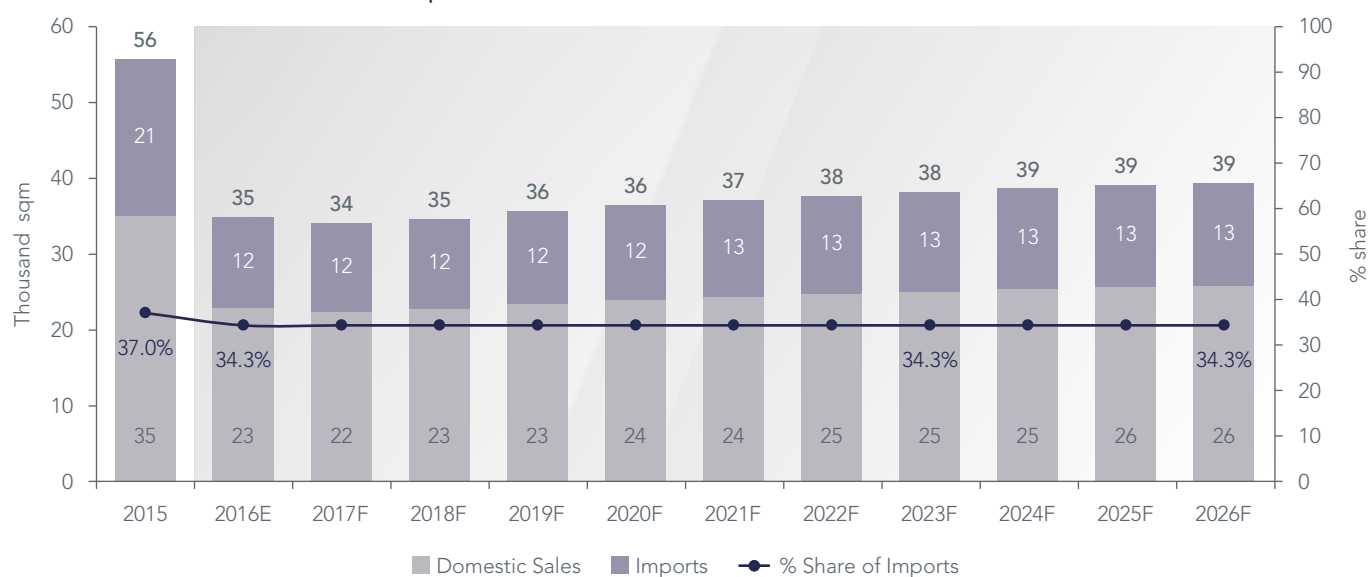
Primary interviews with architectural steel fabrication units indicate that, due to the high cost of operations, Qatar's production is not cost competitive and hence architectural steel fabrication units do not consider the export of decorative doors an attractive opportunity. Due to high salaries, rents and cost of raw material, production cost in Qatar is higher than in other countries in the GCC region. The analysis of export data⁹⁰ indicates that during 2001 and 2015, the exports of decorative doors were only 0.52% of domestic production.

^{89,90} ITC Trademap

5.1.2.2.4 Trade Forecast

Imports: The import forecast of decorative doors indicates that about 34.3% of the market requirements (in quantity terms) will be met by imports⁹¹. Primary interviews indicate that imports are about 10% to 20% cheaper than domestic production. Imports are likely to range from 11,947sqm in 2016 to 13,495sqm in 2026.

Chart 77. Qatar's Decorative Doors Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast of decorative doors indicates that exports may have a minor opportunity as only 0.52% domestic production may be exported, subject to rare opportunities, e.g., Qatari customer choosing to build a villa in the KSA and sourcing from Qatar-based fabricators⁹². Exports are likely to range from 118sqm in 2016 to 133sqm in 2026.

Chart 78. Qatar's Decorative Doors Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

⁹¹ Team Analysis

⁹² Primary Interviews

5.1.2.3. Pricing Analysis

The selling prices of decorative doors are quoted on the basis of per sqm and vary as per the size, design, color, intricate decorative features and other specifications. Currently, the 2016 domestic prices⁹³ for decorative doors are in the range of QAR1,000 to QAR2,500 per sqm (average of QAR1,800 per sqm). On an average, imports are 13% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR2,301 per sqm for domestic production and QAR1,999 per sqm for imports in 2026.

Chart 79. Qatar's Decorative Doors Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

5.1.3. Steel Flush Doors

Steel flush doors are used in key areas, such as fire escape staircase and lift lobby, and service areas, such as electricity rooms and other utility chambers. These are made from steel sheets, plates and angles, and are usually painted in desired color. Some doors can be fitted with fixed glass panels.

Based on the requirement, steel flush doors can be fire-rated for fire escape staircases and non-fire-rated for other purposes.

5.1.3.1. Demand-Side analysis

5.1.3.1.1. Historical and Current Market Size

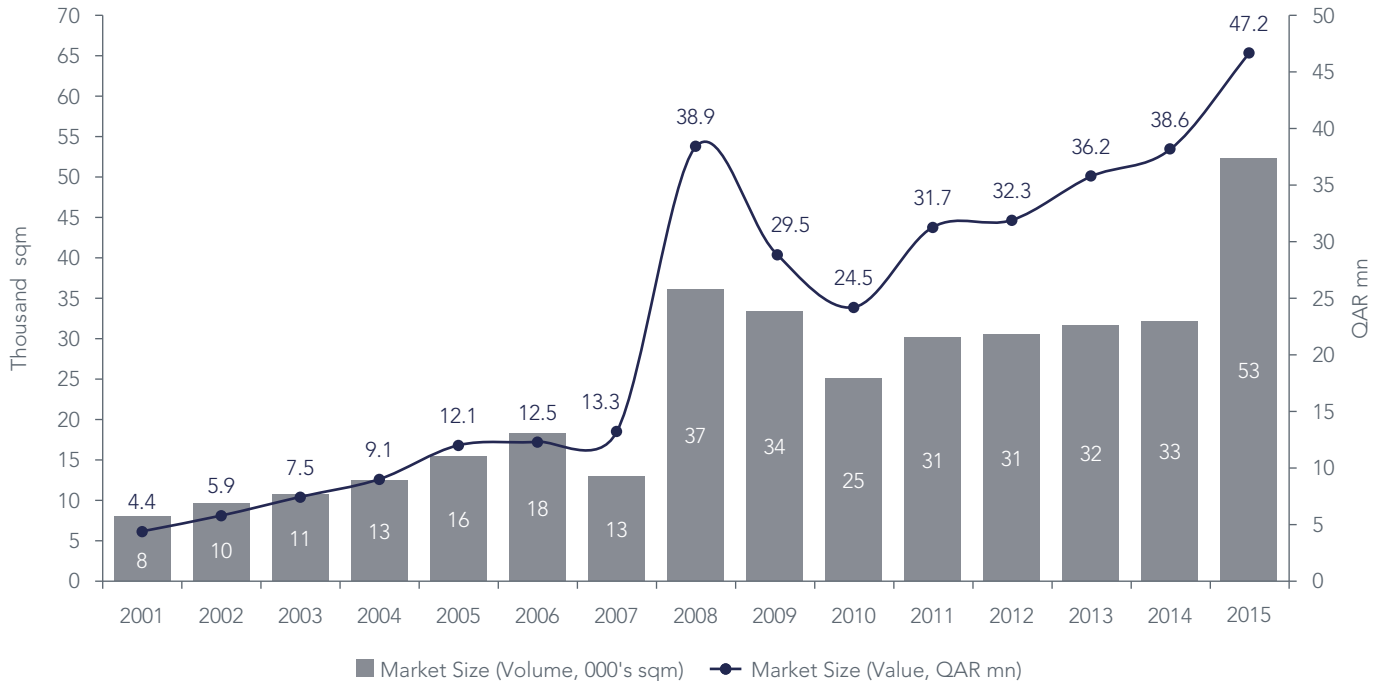
The market size for steel flush doors has followed the development trends in commercial projects, multi-story residential developments followed by public buildings that are its key drivers. The market size grew from 8,053sqm in 2001 to a peak of 36,581sqm (QAR38.9mn) in 2008, at a CAGR of 24.1%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 25,421sqm in 2010. Thereafter, the market recovered and is estimated to have reached 52,986sqm in 2015 (QAR47.2mn).



Steel flush doors: fire-rated

⁹³ Primary Interviews

Chart 80. Qatar's Steel Flush Doors Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

5.1.3.1.2. Market Size Segmentation by Products

Commercial buildings (44%) followed by multi-story residential buildings (35%) are the leading segments for steel flush doors⁹⁴. Public buildings (9%), industrial facilities (7%) and other buildings (5%) have a minor share of the market.

Primary interviews with architectural steel fabrication units indicate that 75% of the demand (in sqm) is for fire-rated doors, while the rest is for non-fire-rated doors.

5.1.3.1.3. Demand Drivers

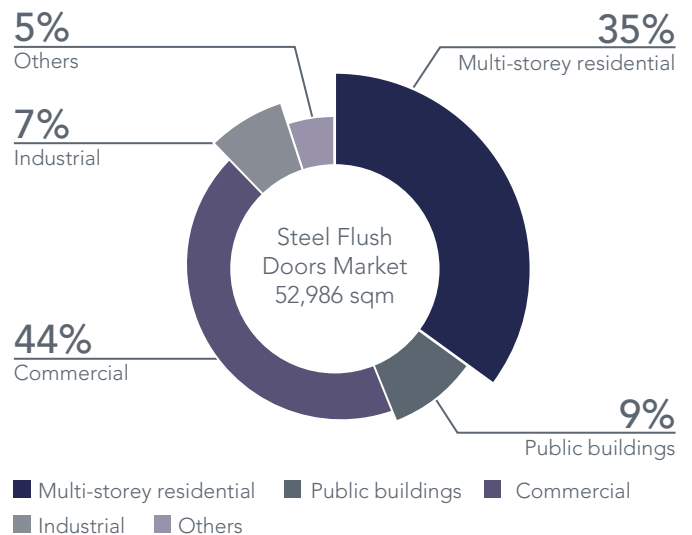
Demand for steel flush doors is driven by requirements from multi-story residential buildings, commercial buildings, public buildings and a few industrial developments. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers who design buildings are the key influencers.

5.1.3.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 40.0% from 52,986sqm in 2015 to 31,774sqm in 2016.

Going forward, the steel flush doors market is expected to grow from 31,774sqm in 2016 to an estimated 35,893sqm in 2026, implying a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR29mn in 2016 to reach QAR41.9mn in 2026.

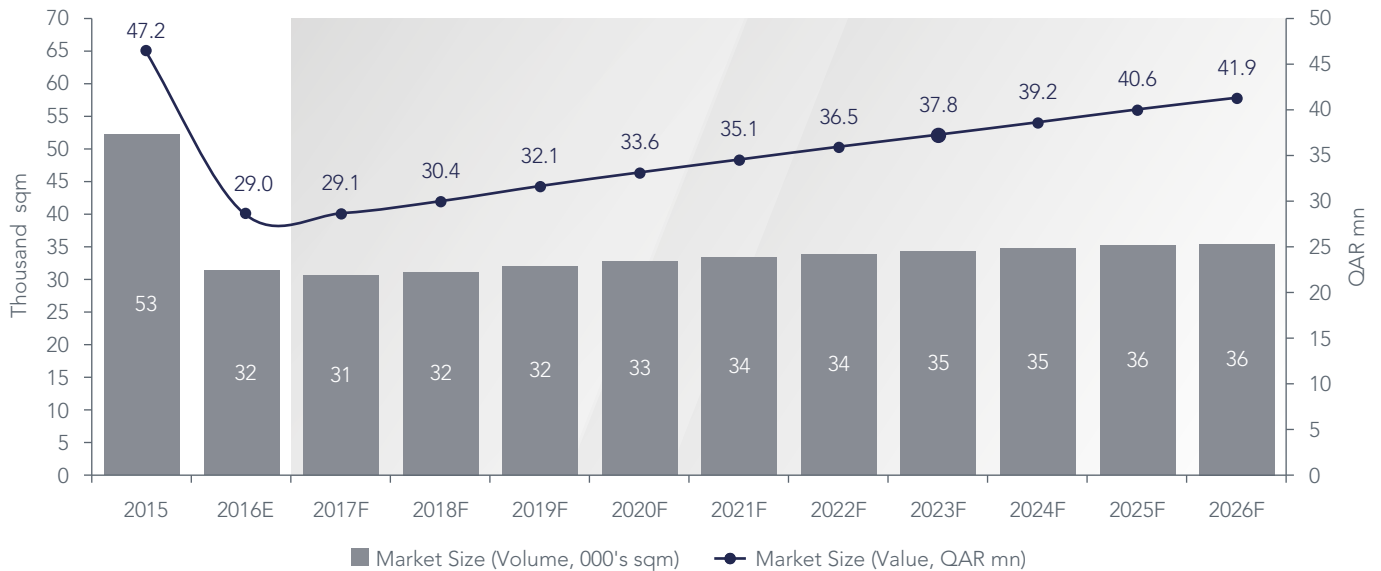
Chart 81. Steel Flush Doors Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Completed Building Statistics, Primary Interviews

⁹⁴ Team Analysis

Chart 82: Qatar's Steel Flush Doors Demand Forecast, 2015 to 2026



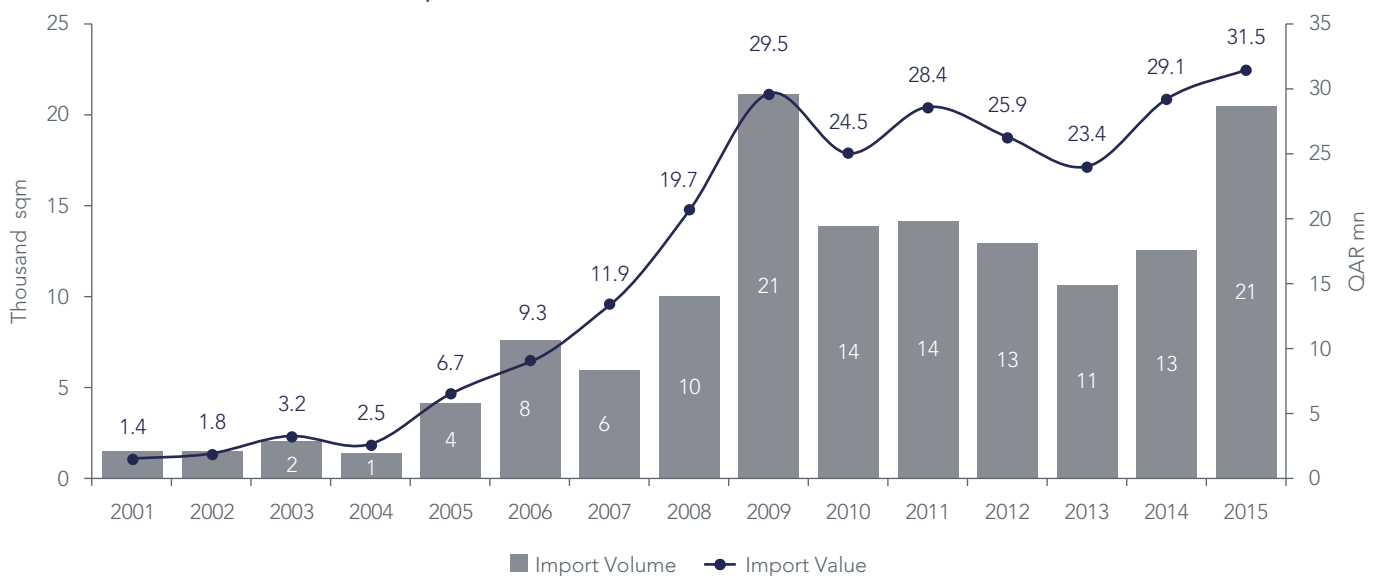
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.3.3. Trade Analysis

5.1.3.3.1. Historical Trade Analysis

Imports: The analysis of historical import data⁹⁵ from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 2,896sqm in 2001 to 19,380sqm (QAR19.7mn) in 2008. Imports more than doubled to 40,880sqm (QAR29.5mn) in 2009, when due to slowdown, inexpensive imports were preferred over domestic production. Thenceforth, imports fell during 2010 and 2014 and again gained preference (39,541sqm, QAR31.5mn) in 2015.

Chart 83: Qatar's Steel Flush Doors Imports, 2001 to 2015

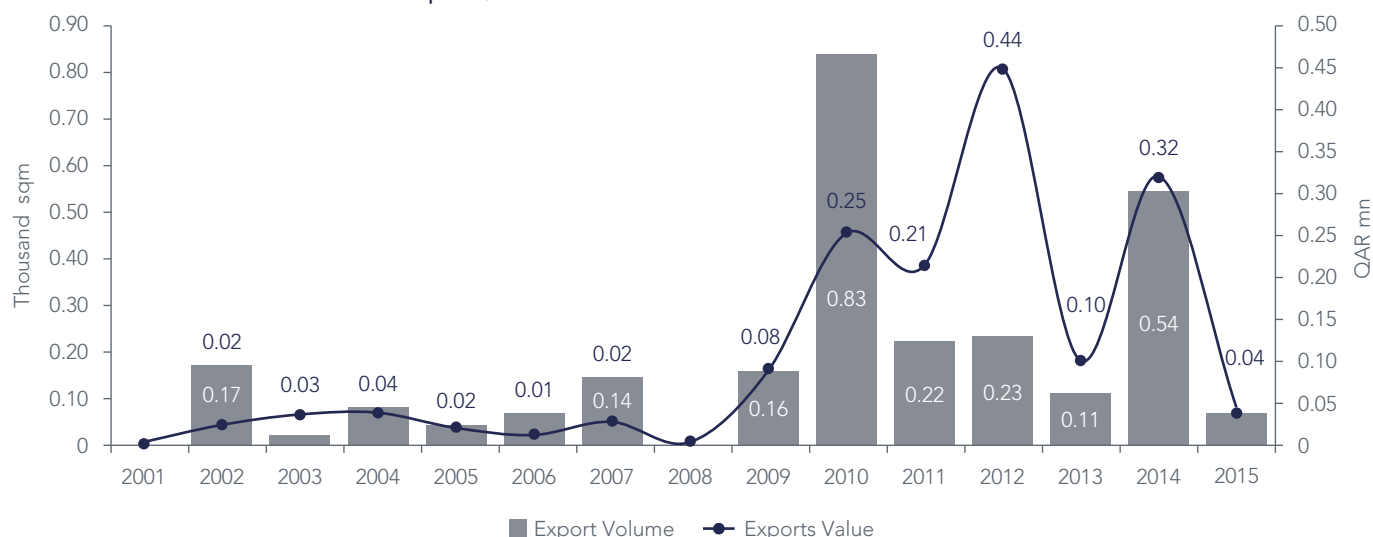


Source: ITC Trademap, Team Analysis

⁹⁵ ITC Trademap

Exports: The analysis of historical export data⁹⁶ indicates that exports have been very irregular and very small as compared to the domestic production. During 2001 and 2015, annual exports averaged at 179sqm of steel flush doors.

Chart 84. Qatar's Steel Flush Doors Exports, 2001 to 2015

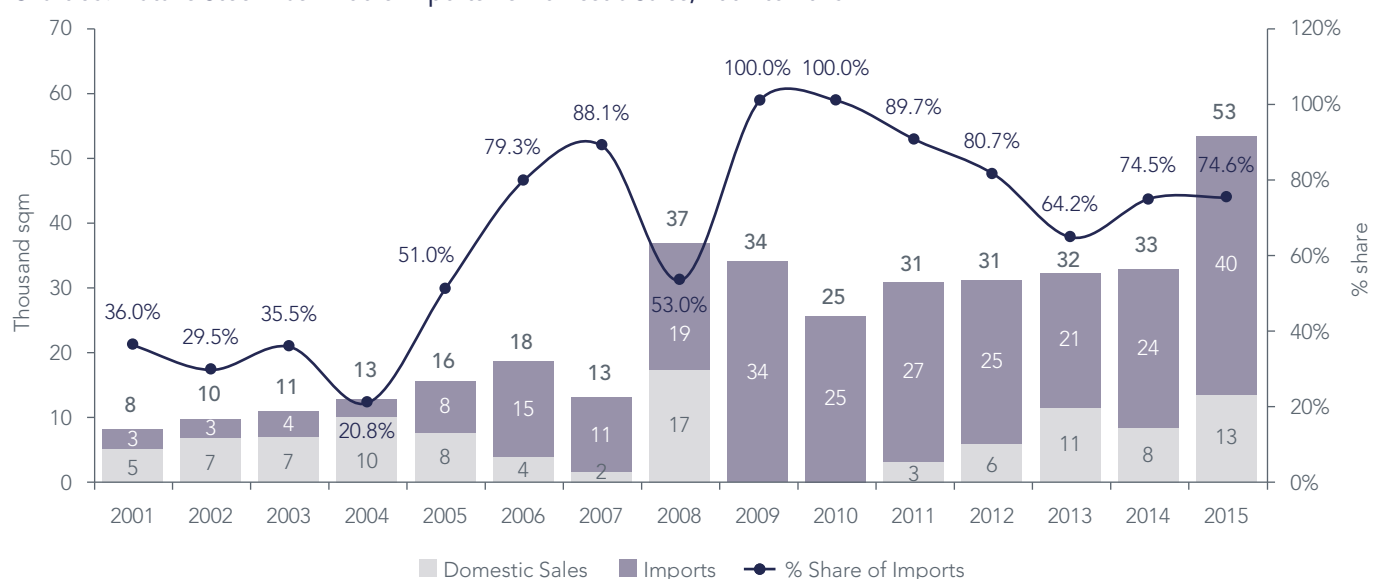


Source: ITC Trademap, Team Analysis

5.1.3.3.2. Share of Imports in Domestic Consumption

The share of imports in Qatar's steel flush doors market grew from 36.0% in 2001 to 53.0% in 2008⁹⁷. After the global economic crisis of 2008–2009, the share of imports further grew to reach 90% to 100% during 2009 and 2011, due to a preference for inexpensive imports. As the economy recovered, the share of imports reduced between 2012 and 2014 and reached 74.6% in 2015. On an average, during 2001 and 2015, 74.4% of the market was serviced by imports.

Chart 85. Qatar's Steel Flush Doors Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

^{96, 97} ITC Trademap

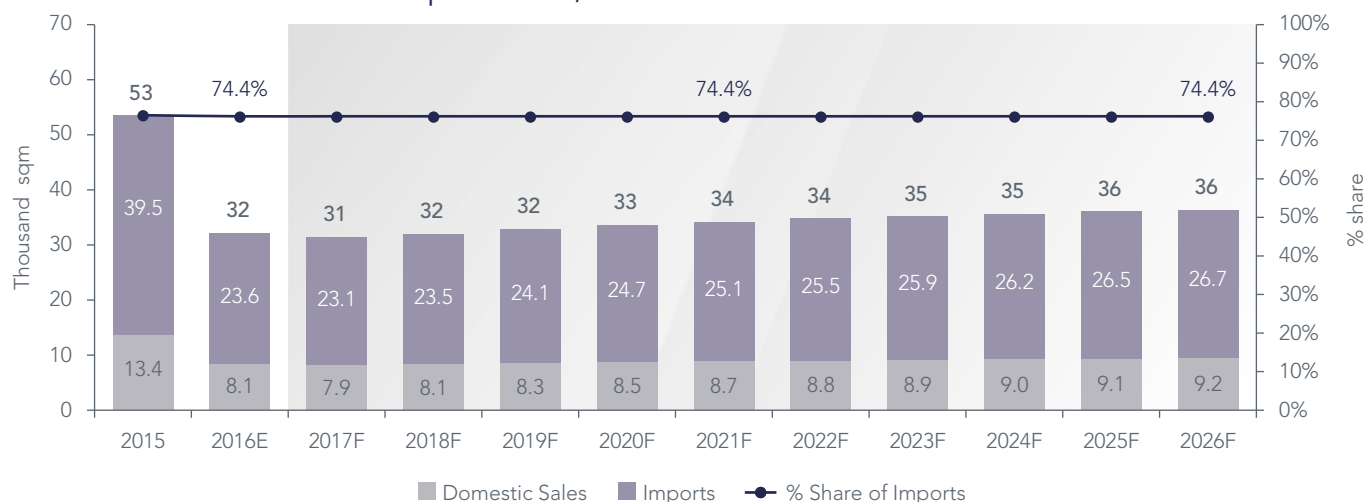
5.1.3.3.3. Assessment of Export Opportunities

Primary interviews with architectural steel fabrication units indicate that, due to the high cost of operations, Qatar's production is not cost competitive and hence architectural steel fabrication units do not consider the export of steel flush doors an attractive opportunity. Due to high salaries, rents and cost of raw material, production cost in Qatar is higher than in other countries in the GCC region. The analysis of export data indicates that during 2001 and 2015⁹⁸, exports of steel flush doors were only 2.6% of domestic production.

5.1.3.3.4. Trade Forecast

Imports: The import forecast of steel flush doors indicates that about 74.4% of the market requirements (in quantity terms) will be met by imports. Primary interviews indicate that imports are about 25% to 40% cheaper than domestic production. Imports are likely to range from 23,638sqm in 2016 to 26,702sqm in 2026.

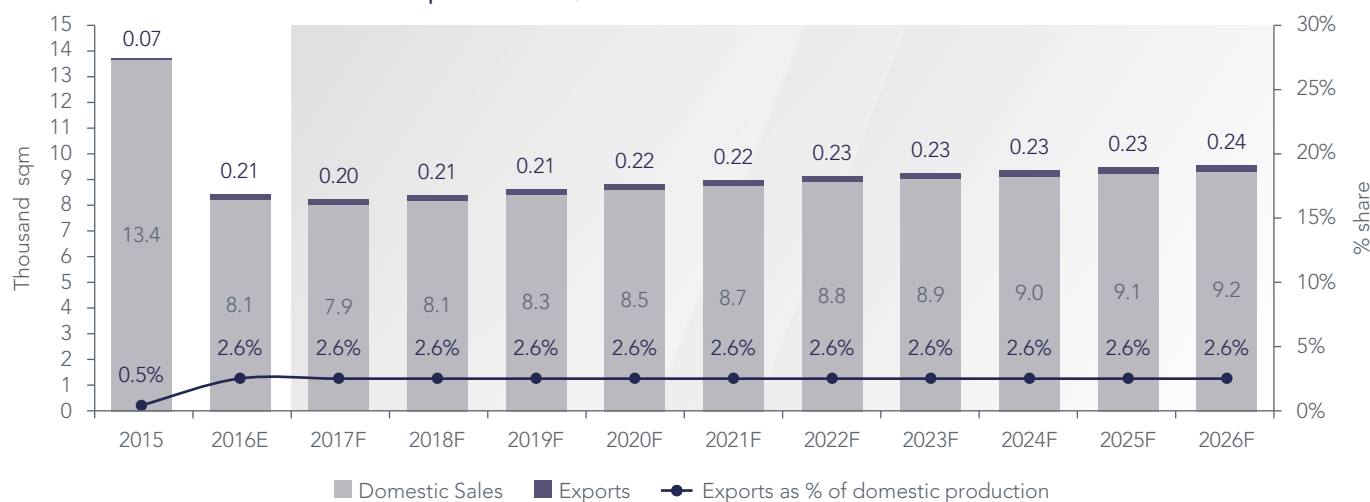
Chart 86. Qatar's Steel Flush Doors Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast of steel flush doors indicates that exports may have a minor opportunity as only 2.6% domestic production may be exported⁹⁹. Exports are most likely to be limited to rare opportunities, e.g., Qatari civil contractors winning international projects and planning to source from Qatar-based fabricators. Exports are likely to range from 209sqm in 2016 to 236sqm in 2026.

Chart 87. Qatar's Steel Flush Doors Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

⁹⁸ ITC Trademap

⁹⁹ Team Analysis

5.1.3.4. Pricing Analysis

The selling prices of steel flush doors are quoted on the basis of per sqm and vary as per the size, design, color, number of hours of fire resistance offered and other specifications. Currently, the 2016 domestic prices¹⁰⁰ for steel flush doors are in the range of QAR1,000 and QAR1,500 per sqm (average of QAR1,200 per sqm). On an average, imports are 32% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR1,534 per sqm for domestic production and QAR1,042 per sqm for imports in 2026.

Chart 88. Qatar's Steel Flush Doors Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

5.1.4. Rolling Shutters

Rolling shutters are used in commercial premises (shops) and industrial buildings, such as factory sheds and warehouses. They may also be used to control ingress into basements. Rolling shutters roll up and down around a steel pipe fixed at the top of the opening, and save space as compared to conventional vertically hung swing doors. These are made from steel sheets, profiles and pipes, and are usually painted in desired colors. In addition to being operated with the help of mechanical levers, these doors can be operated with electronic controls.

5.1.4.1 Demand-Side Analysis

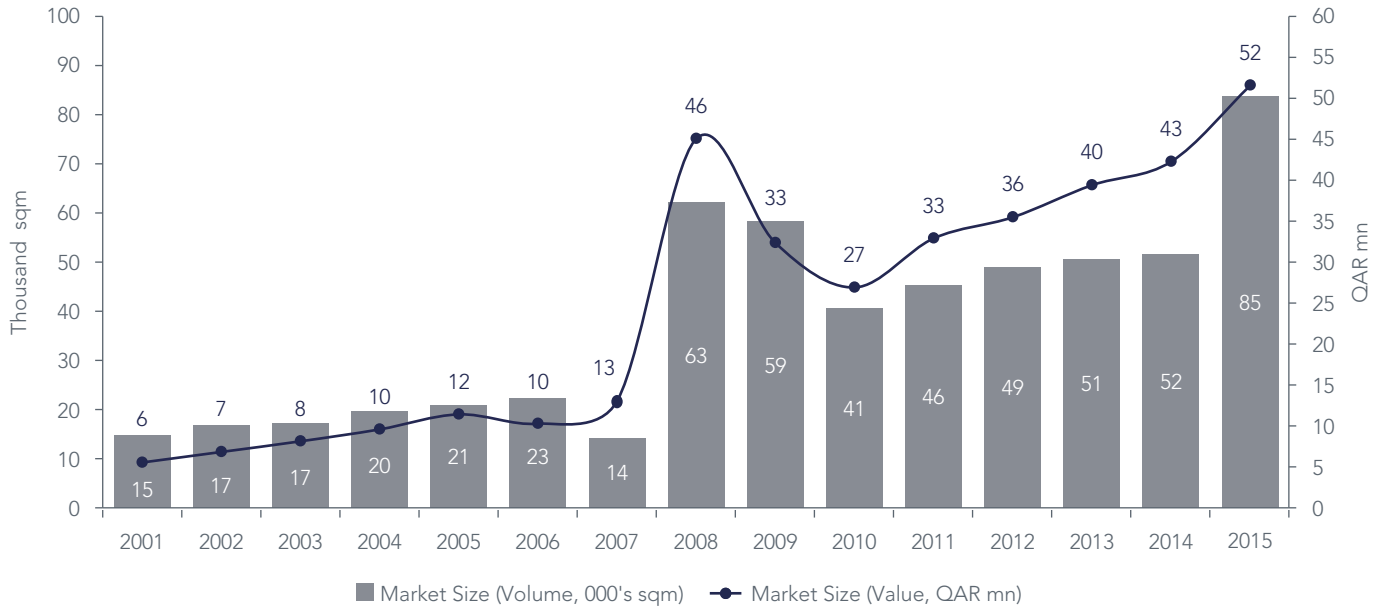
5.1.4.1.1. Historical and Current Market Size

The market size for rolling shutters has followed the development trends in commercial projects and industrial developments, such as warehouses and factory sheds. The market size grew from 14,818sqm in 2001 to a peak of 62,690sqm (QAR46mn) in 2008, at a CAGR of 22.9%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 41,007sqm in 2010. Thereafter, the market recovered and is estimated to have reached 84,611sqm in 2015 (QAR52mn).



¹⁰⁰ Primary Interviews

Chart 89. Qatar's Rolling Shutters Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

5.1.4.1.2. Market Size Segmentation by Products

Commercial development (shops and retail units) is the largest segment accounting for 83% of the demand followed by industrial units at 17%¹⁰¹.

5.1.4.1.3. Demand Drivers

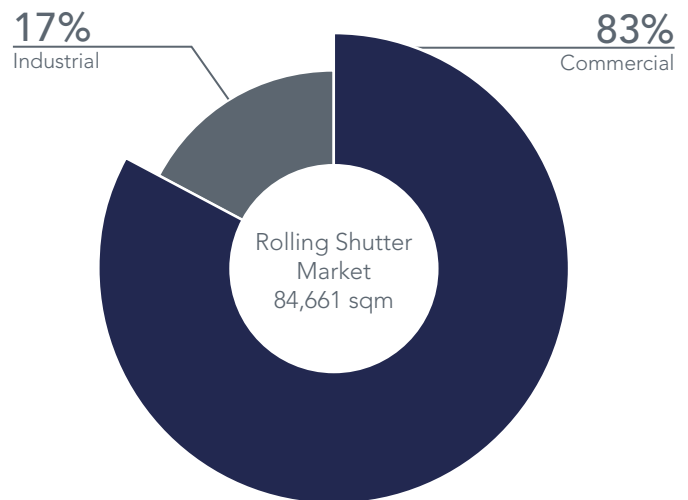
Demand for rolling shutters is driven by requirements arising from commercial (shops and retail units) and industrial developments. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers are the key influencers.

5.1.4.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 40.0% from 84,611sqm in 2015 to 50,775sqm in 2016.

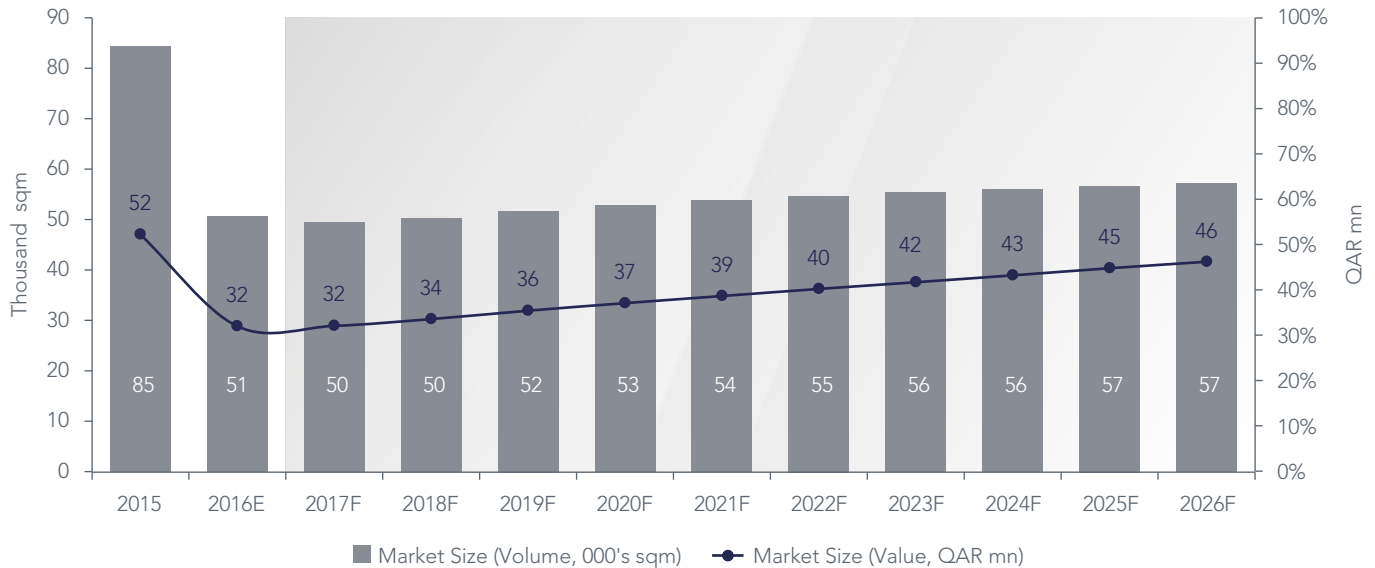
Going forward, the rolling shutter market is expected to grow from 50,775sqm in 2016 to an estimated 57,357sqm in 2026¹⁰², registering a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR32mn in 2016 to reach QAR46mn in 2026.

Chart 90. Rolling Shutters Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Completed Building Statistics, Primary Interviews

Chart 91. Qatar's Rolling Shutters Demand Forecast, 2015 to 2026



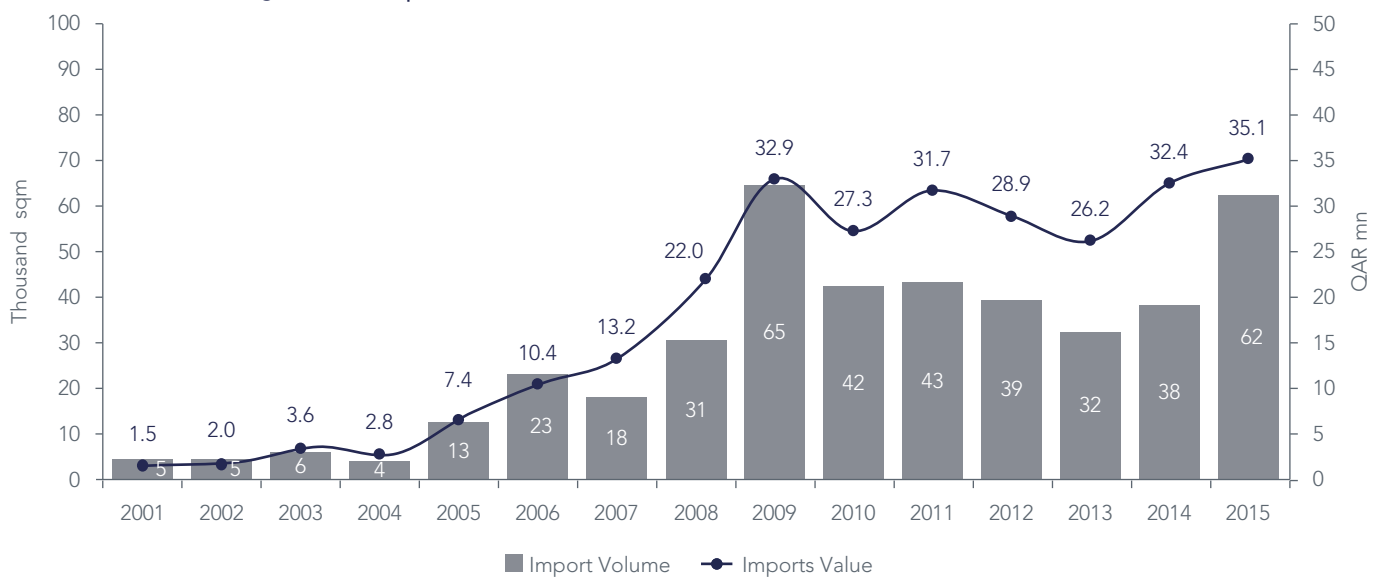
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.4.2. Trade Analysis

5.1.4.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 4,573sqm in 2001 to 30,600sqm (QAR22.0mn) in 2008. Imports more than doubled to 64,547sqm (QAR32.9mn) in 2009, when due to slowdown, inexpensive imports were preferred over domestic production. Thenceforth, imports fell during 2010 and 2014 and again gained preference (62,433sqm, QAR35.1mn) in 2015.

Chart 92. Qatar's Rolling Shutters Imports, 2001 to 2015

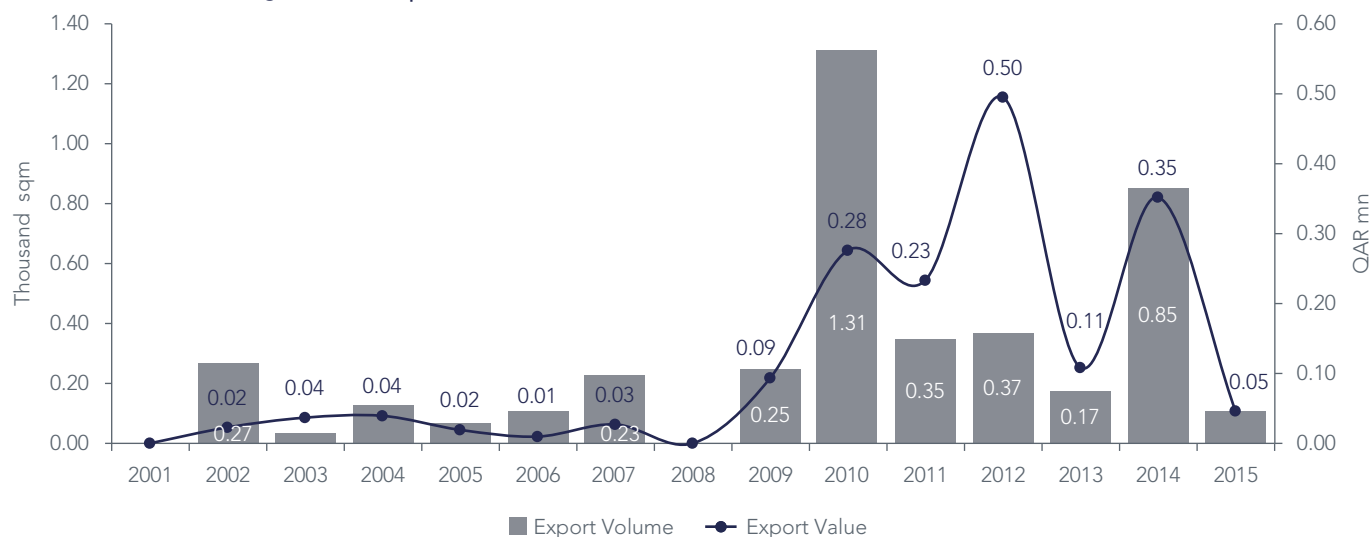


Source: ITC Trademap, Team Analysis

Exports: The analysis of historical export data indicates that exports have been very irregular and very small as compared to the domestic production. During 2001 and 2015, annual exports averaged at 282sqm of rolling shutters.

¹⁰³ Primary Interviews

Chart 93. Qatar's Rolling Shutters Exports, 2001 to 2015



Source: ITC Trademap, Team Analysis

5.1.4.2.2. Share of Imports in Domestic Consumption

The share of imports in Qatar's rolling shutters market was in the range of 21% to 35% during 2001 and 2004. The market was entirely served by imports during 2006 and 2010 with the exception of 2008. Domestic players had small market shares during 2011 and 2014. On an average, during 2001 and 2015, 74.5% of the market was serviced by imports.

Chart 94. Qatar's Rolling Shutters Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

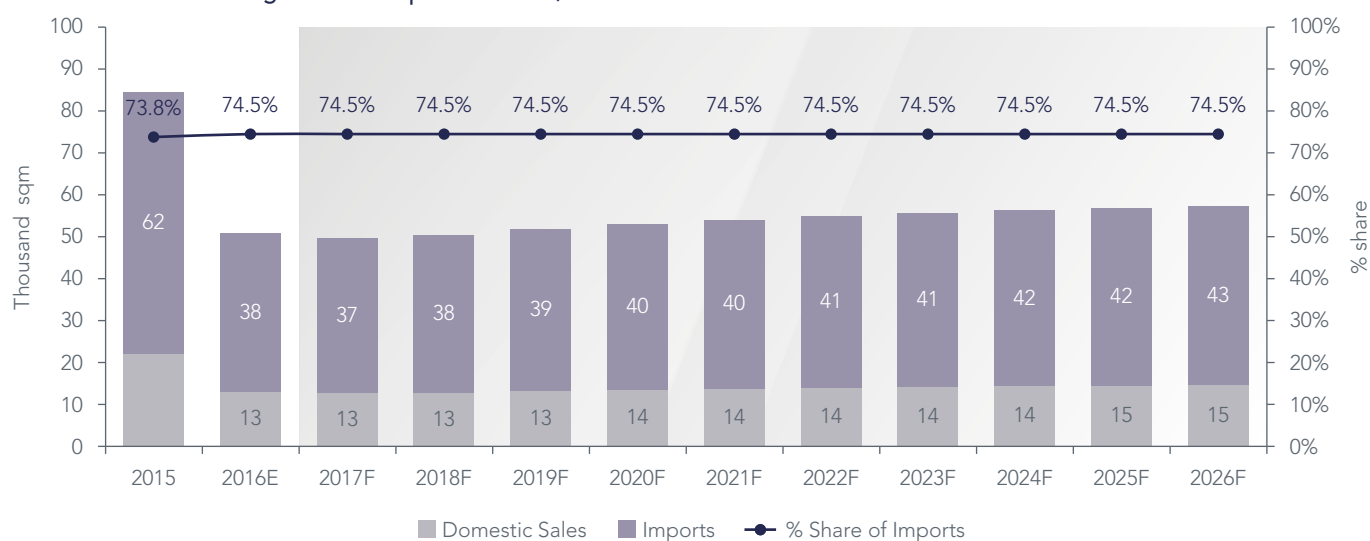
5.1.4.2.3. Assessment of Export Opportunities

Primary interviews with architectural steel fabrication units indicate that, due to the high cost of operations, Qatar's production is not cost competitive and hence architectural steel fabrication units do not consider the export of rolling shutters an attractive opportunity. Due to high salaries, rents and cost of raw material, production cost in Qatar is higher than in other countries in the GCC region. The analysis of export data indicates that during 2001 and 2015, exports of rolling shutters were only 2.6% of domestic production.

5.1.4.2.4. Trade Forecast

Imports: The import forecast of rolling shutters indicates that about 74.5% of the market requirements (in quantity terms) will be met by imports. Primary interviews indicate that imports are about 25% to 40% cheaper than domestic production. Imports are likely to range from 37,827sqm in 2016 to 42,730sqm in 2026.

Chart 95. Qatar's Rolling Shutters Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast of rolling shutters indicates that exports may have a minor opportunity as only 2.6% domestic production may be exported. Exports are most likely to be limited to rare opportunities, e.g., Qatari civil contractors winning international projects and planning to source¹⁰³ from Qatar-based fabricators. Exports are likely to range from 339sqm in 2016 to 383sqm in 2026.

Chart 96. Qatar's Rolling Shutters Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

5.1.4.3. Pricing Analysis

The selling prices of rolling shutters are quoted on the basis of per sqm and vary as per the size, color and other specifications. Currently, the 2016 domestic prices for rolling shutters are in the range of QAR600 and QAR1,100 per sqm (average of QAR800 per sqm). On an average, imports are 28% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR1,022 per sqm for domestic production and QAR736 per sqm for imports in 2026.

Chart 97. Qatar's Rolling Shutters Fabrication Selling Prices Forecast, 2015 to 2026

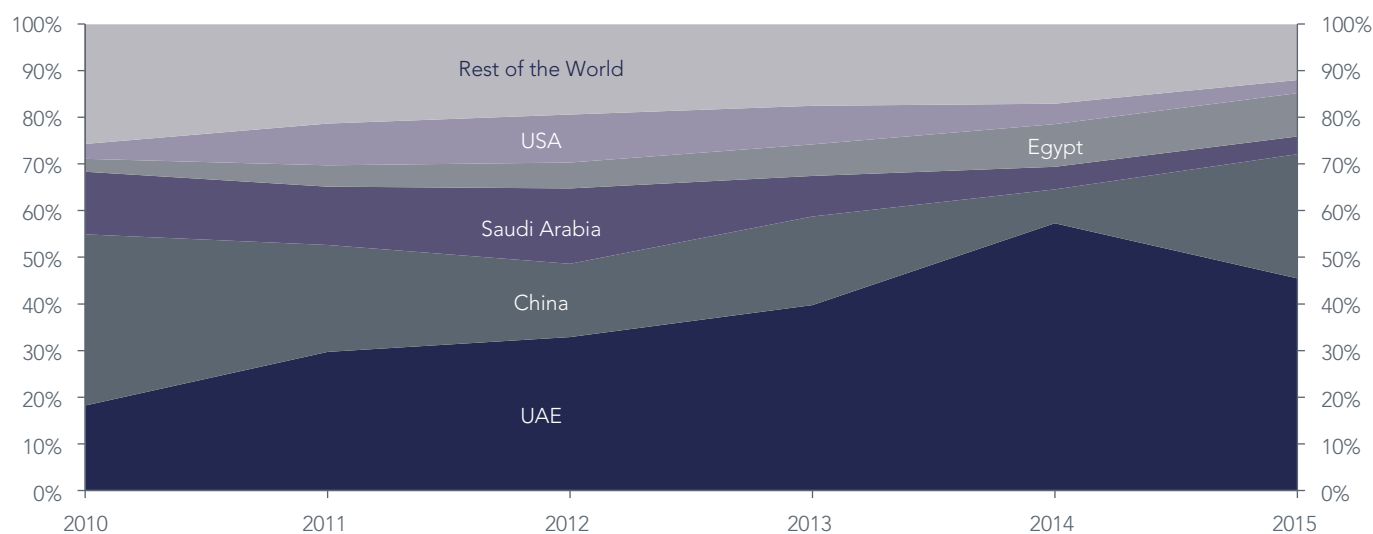


Source: Team Analysis, Primary Interviews

5.1.4.3.1. Trade by Source and Destination (All types of doors)

Imports: The analysis of steel doors (all types of steel doors) total imports quantity, during the period 2010 to 2015, amounting to 38,745MT indicates that the UAE (37% share), China (22% share) and the KSA (9% share) are the major sources of imports.

Chart 98. Key Sources of Imports (All Types of Steel Doors), 2010 to 2015

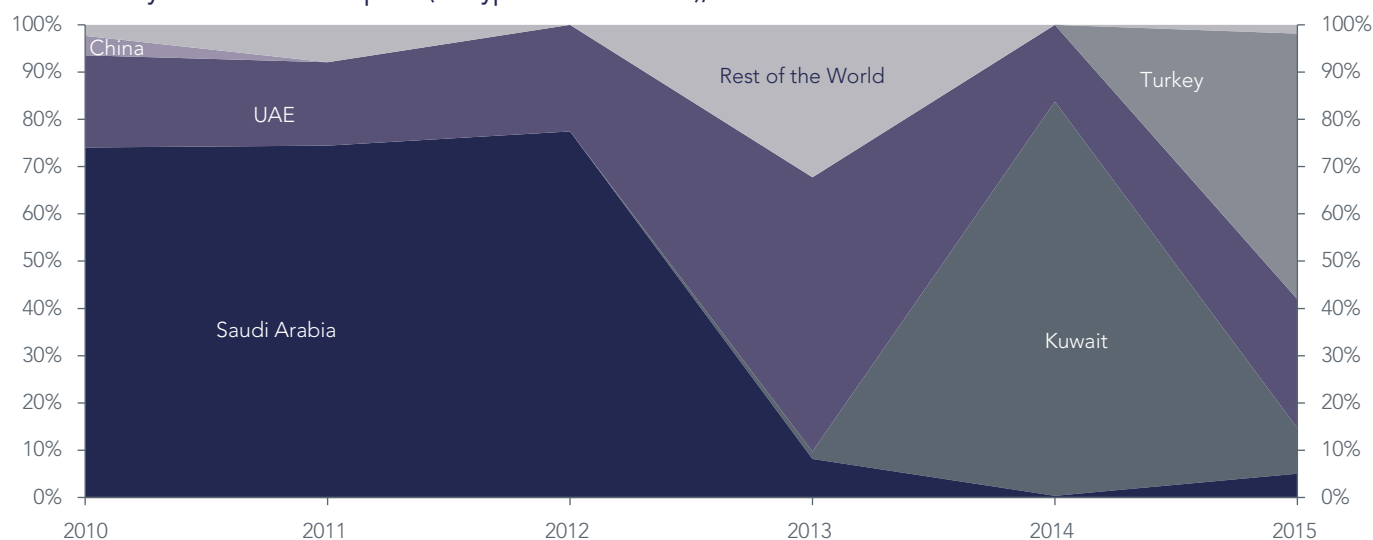


Source: ITC Trademap, Team Analysis

The UAE has been the leading source of imports of steel doors into Qatar, accounting for 45.5% of all imports in 2015. China's share of imports reduced from 2010 to 2014 and increased in 2015. Saudi Arabia, Egypt and the USA had consistently had small shares in the import market during 2010 to 2015. From 2012 to 2015, Egypt's share increased, while that of Saudi Arabia decreased.

Exports: The analysis of steel doors (all types of steel doors) total exports quantity, during the period 2010 to 2015, amounting to 474MT indicates that the KSA (49% share), Kuwait (23% share) and the UAE (21% share) are the major destination for exports.

Chart 99. Key Destinations of Exports (All Types of Steel Doors), 2010 to 2015



Source: ITC Trademap, Team Analysis

The small volume of exports from Qatar from 2010 to 2015 were to nearby countries, such as Saudi Arabia, Kuwait and the UAE. Exports to Turkey reported in 2015 are likely to be on account of the return of imported goods.

5.1.5. Staircase Railings

Staircase railings are installed along staircases and offer support to people as they climb up and down the staircase. These are made from steel rods, sections, pipes and can be combined with other materials such as glass and wood. Steel staircase can be fabricated in a variety of options in terms of sizes, shapes, designs, glass panels and accessories of other metals, such as brass and aluminum. Some staircase railings have intricate design patterns attached to the steel rods, giving it an esthetic appeal. These design patterns are usually painted in golden color and made from cast aluminum.



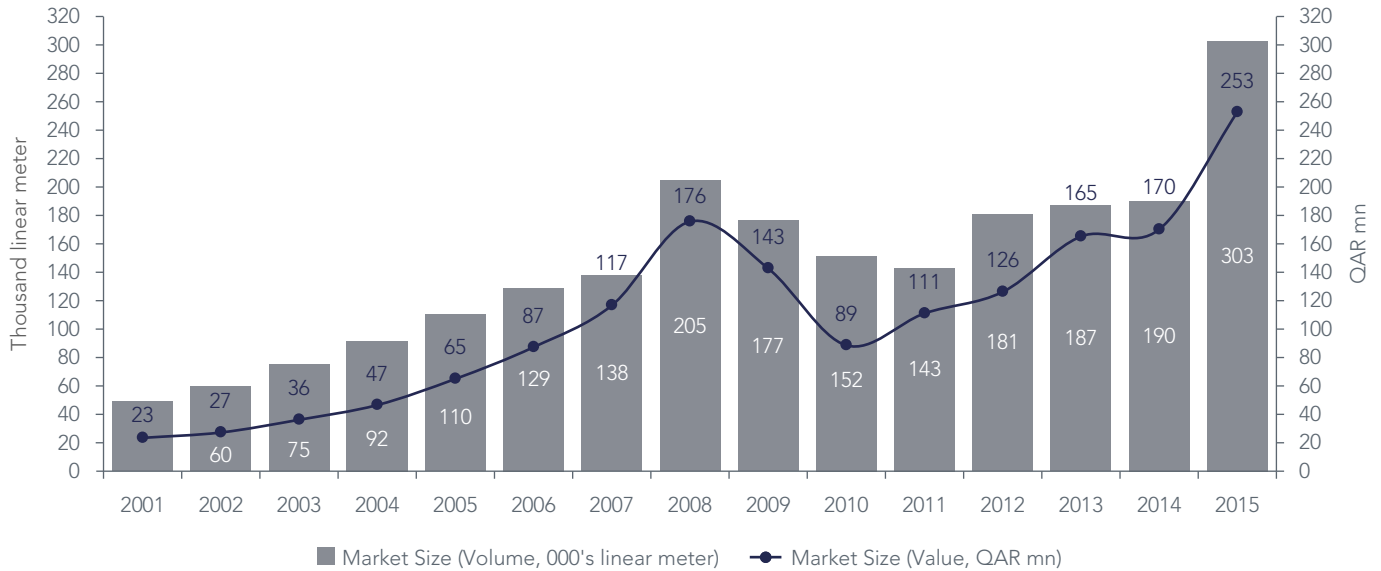
5.1.5.1. Demand-Side Analysis

5.1.5.1.1. Historical and Current Market Size

The market size for staircase railing has followed the real estate development trends as this product is used in all types of real estate asset classes. The market size grew from 49,286 linear meter in 2001 to a peak of 204,826 linear meter (QAR176mn) in 2008, at a CAGR of 20.0%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 143,125 linear meter in 2011. Thereafter, the market recovered and is estimated to have reached 302,996 linear meter in 2015 (QAR253mn).



Chart 100. Qatar's Staircase Railings Demand, 2001 to 2015

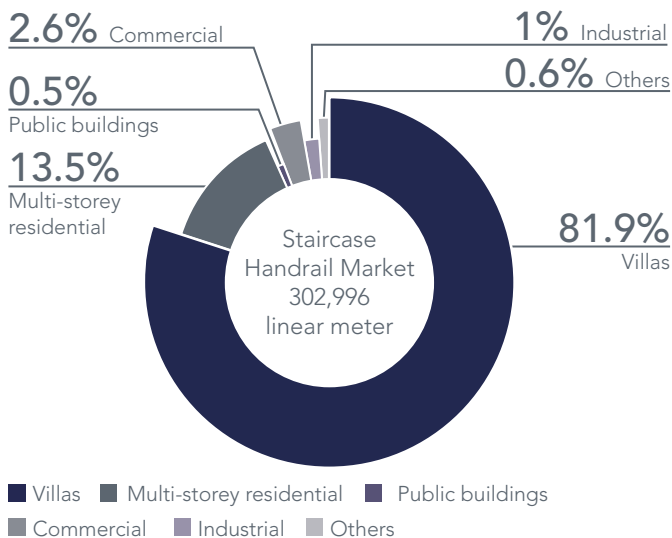


Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.5.1.2. Market Size Segmentation by Products

Staircase railings for villas is the largest segment accounting for 81.9% of the demand. Villas constitute 45% of upcoming real estate developments in Qatar and have high consumption rates (linear meter of staircase railing consumed per 1,000sqm of built-up area) of staircase railings. Multi-story residential and commercial developments are the next important segments having 13.5% and 2.6% of the market share, respectively.

Chart 101. Staircase Railings Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Competed Building Statistics, Primary Interviews

5.1.5.1.3. Demand Drivers

Demand for staircase railings is driven by requirements arising from real estate development projects that include various types of developments, such as villas, multi-story residential buildings, commercial developments, public buildings and industrial facilities. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers who design staircase railings are the key influencers.

5.1.5.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 40.0% from 302,996 linear meter in 2015 to 185,661 linear meter in 2016.

Going forward, the staircase railing market¹²⁵ is expected to grow from 185,661 linear meter in 2016 to an estimated 209,727 linear meter in 2026, registering a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR160mn in 2016 to reach QAR231mn in 2026.

Chart 102. Qatar's Staircase Railings Demand Forecast, 2016 to 2026



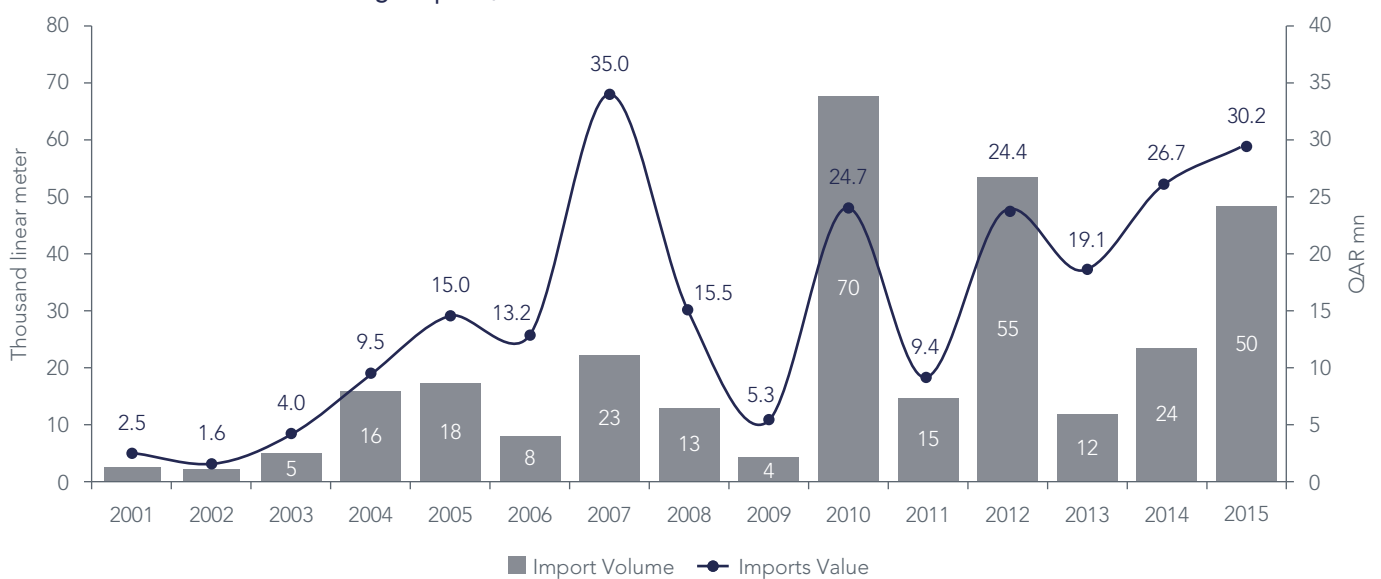
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.5.2. Trade Analysis

5.1.5.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar, over the 2001 and 2007 period. Imports increased from 2,389 linear meter in 2001 to 22,664 linear meter (QAR35mn) in 2007. Thereon, imports have been irregular, rising and falling in the alternate years to reach 49,623 linear meter (QAR30.2mn) in 2015.

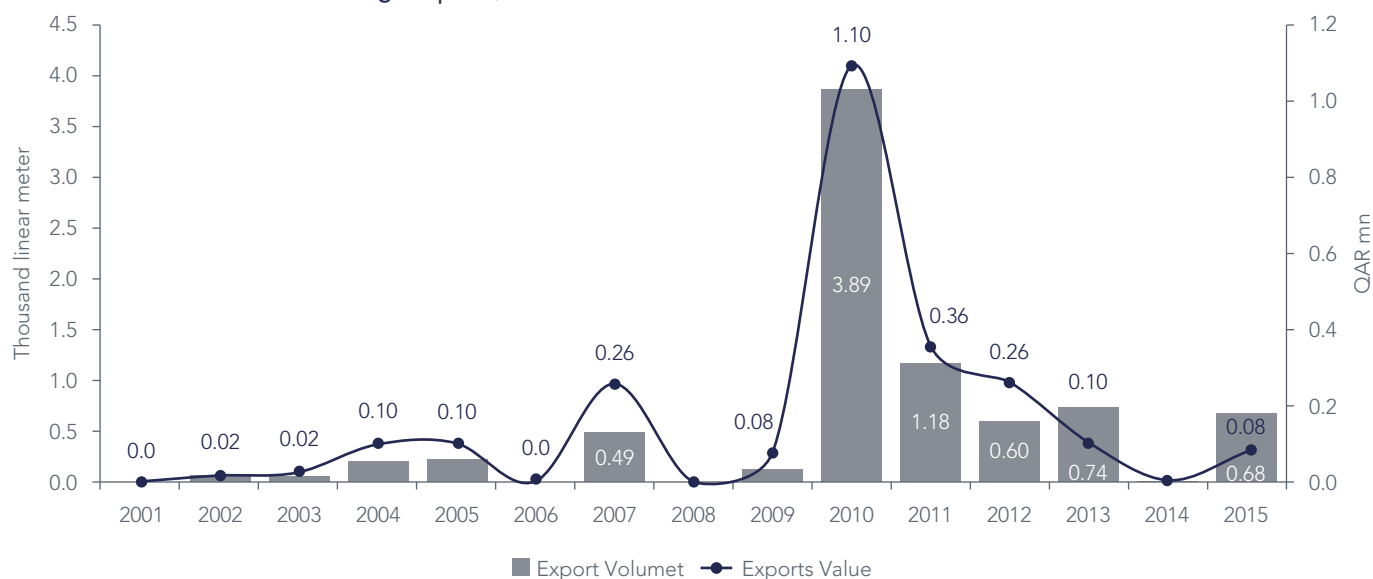
Chart 103. Qatar's Staircase Railings Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: Analysis of historical export data indicates that exports have been highly irregular and marginal as compared to the domestic production. In 2001 and 2015, the annual exports averaged at 550 linear meter of staircase railing.

Chart 104. Qatar's Staircase Railings Exports, 2001 to 2015

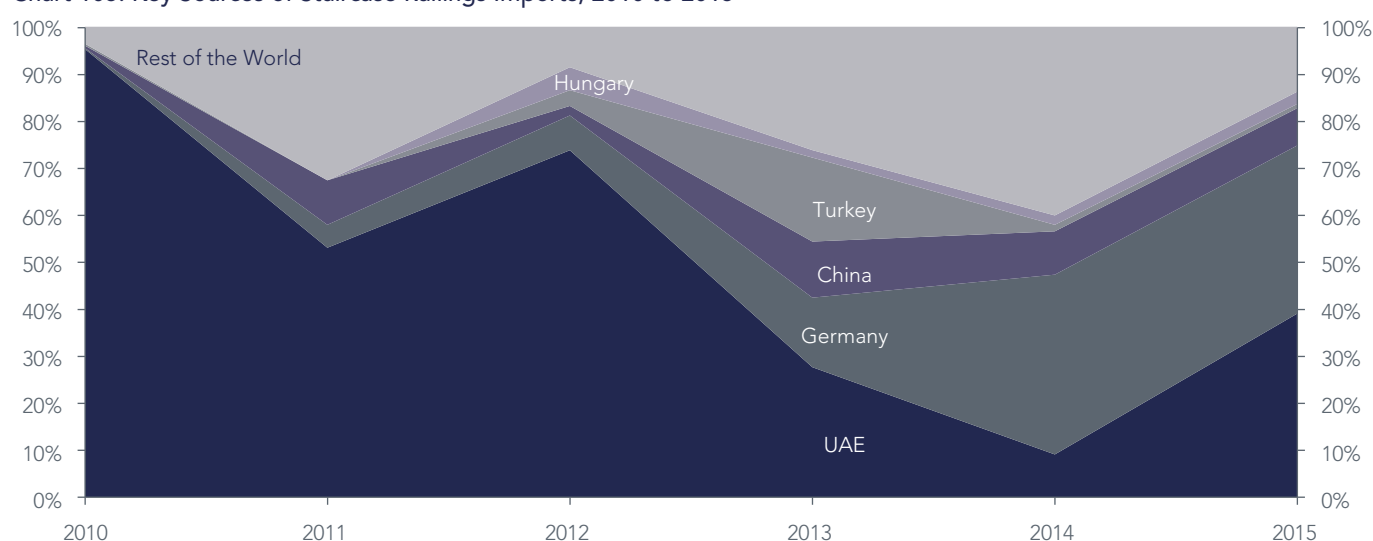


Source: ITC Trademap, Team Analysis

5.1.5.2.2. Trade by Source and Destination

Imports: The analysis of the steel staircase railing imports amounting to 14,641MT from 2010 to 2015 indicates that the UAE (62% share), Germany (15% share) and China (5% share) are the major sources of imports.

Chart 105. Key Sources of Staircase Railings Imports, 2010 to 2015

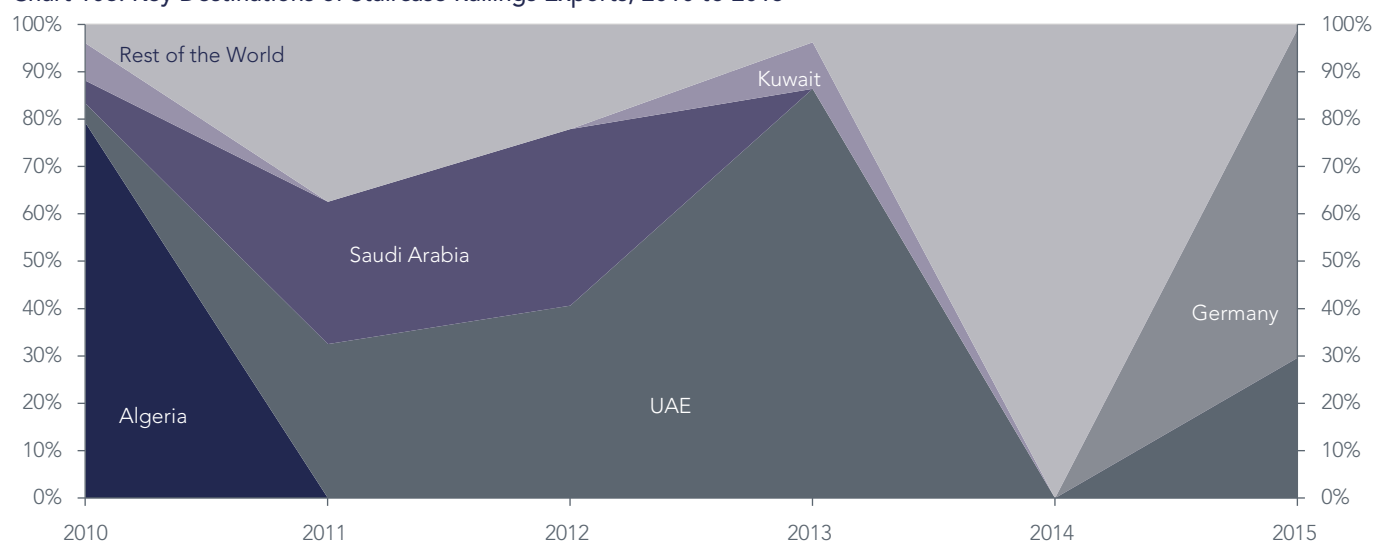


Source: ITC Trademap, Team Analysis

Products from the UAE accounted for over 90% of imports into Qatar in 2010. However, its share fell steadily to reach 39% in 2015. German, Chinese and Turkish products saw an increase in their share during 2013 to 2015. From 2012 to 2015, the share of the rest of the world in imports into Qatar increased, which indicates that the sources of imports diversified during this period.

Exports: The analysis of steel staircase exports from Qatar amounting to 461MT from 2010 to 2015 indicates that Algeria (43% share), the UAE (23% share) and the KSA (11% share) are the major destinations for exports.

Chart 106. Key Destinations of Staircase Railings Exports, 2010 to 2015



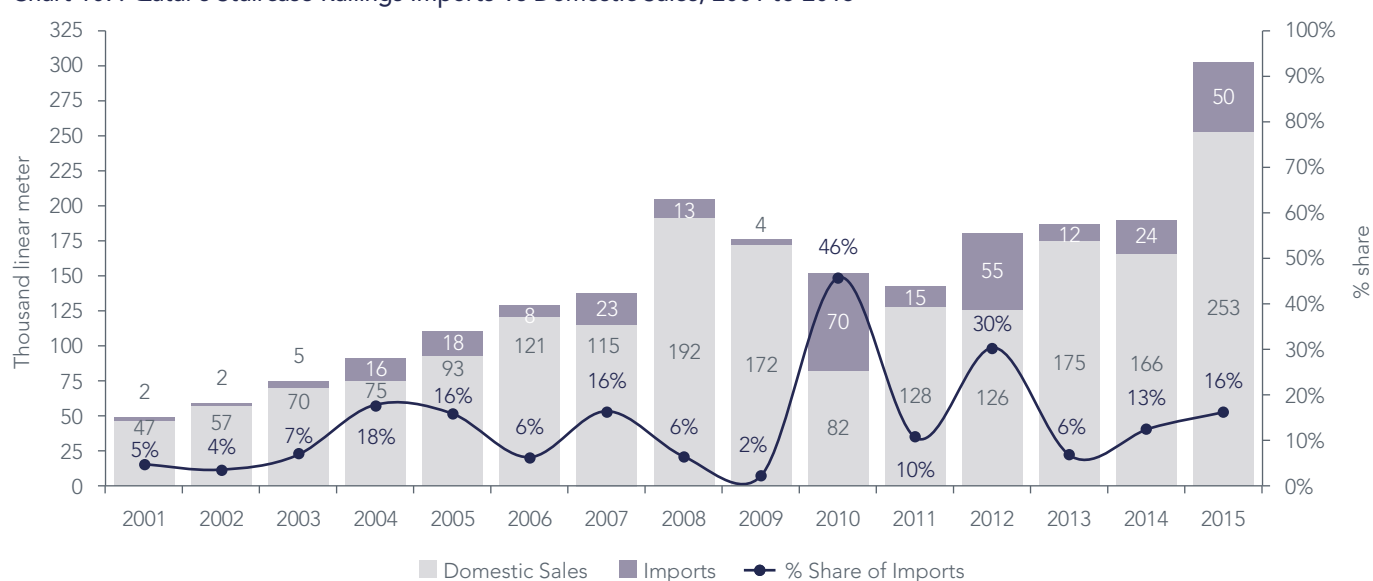
Source: ITC Trademap, Team Analysis

Qatar's exports quantity had been small and focused on countries such as the UAE, Saudi Arabia and Kuwait during 2011 to 2013. Exports to Germany are likely to be the return of imported goods as a sizable quantity was imported from Germany in 2015.

5.1.5.2.3. Share of Imports in Domestic Consumption

Historically, the share of imports in Qatar's steel staircase railing market has been lower than that of the domestic players across 2001 and 2015. On average, in 2001 and 2015, 14.5% of the market was serviced by imports. Due to preference for inexpensive imports, the share of imports increased to 46% and 26% in 2010 and 2015, respectively.

Chart 107. Qatar's Staircase Railings Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

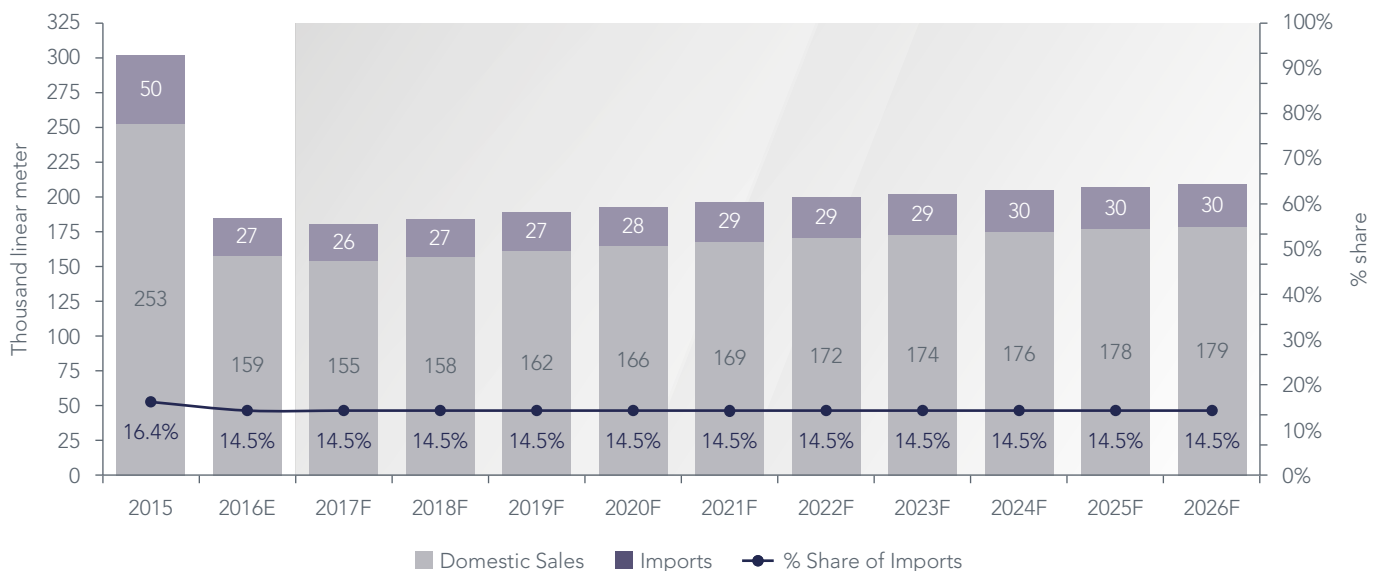
5.1.5.2.4. Assessment of Export Opportunities

Primary interviews with architectural steel fabrication units indicate that due to high cost of operations, Qatar's production is not cost competitive and hence, architectural steel fabrication units do not consider export of steel staircase railing an attractive opportunity. Due to high cost of salaries, rent and raw material, production cost in Qatar is high as compared to other countries in the GCC region. Analysis of export data indicates that during 2001 and 2015, exports of steel staircase railing constituted only 0.44% of the domestic production.

5.1.5.2.5. Trade Forecast

Imports: The import forecast of steel staircase railings indicates that about 14.5% of the market requirements (in quantity terms) will be met by imports. Primary interviews indicate that imports are about 25% to 35% cheaper than domestic production. Imports are likely to range from 26,851 linear meter in 2016 to 30,332 linear meter in 2026. Imports would have a minor share because, as compared to other architectural steel fabrication products, staircase railings require substantial amount of site-specific working (e.g., angle of inclination, curve, height, etc.), due to which customers prefer to rely on domestic players.

Chart 108. Qatar's Staircase Railings Import Forecast, 2015 to 2026

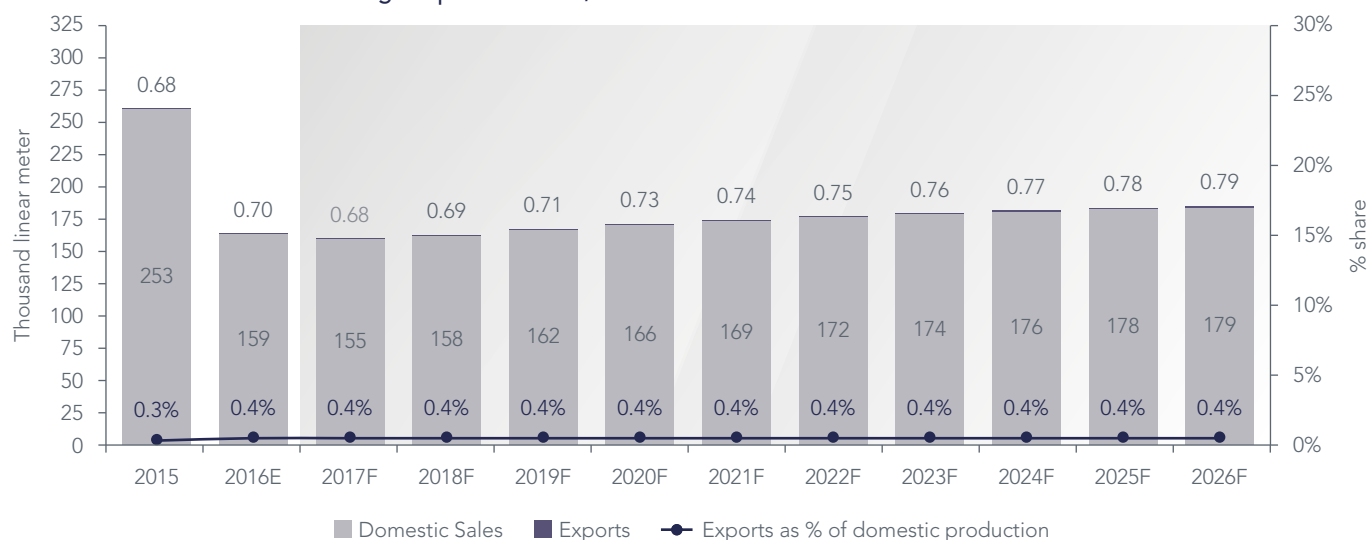


Source: Team Analysis, ITC Trademap

Exports: The ten-year export forecast of steel staircase railings indicates that exports may have a minor opportunity as only 0.44% domestic production may be exported. Exports are most likely to be limited to rare opportunities, e.g., Qatari civil contractors winning international projects and planning to source from Qatar-based fabricators, or a Qatari customer choosing to build a villa in the KSA and procuring from Qatar-based fabricators. Exports are likely to range from 696 linear meter in 2016 to 786 linear meter in 2026.



Chart 109. Qatar's Staircase Railings Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

5.1.5.3. Pricing Analysis

Selling prices for steel staircase railings are quoted on per linear meter basis and vary as per the design, size, color, painted steel or stainless steel, use of other materials such as glass panels, and other specifications. Currently, the 2016 domestic prices for staircase railings are in the range of QAR700 to QAR2,000 per linear meter (average of QAR900 per linear meter). On average, imports are 30.7% cheaper as compared to domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR1,150 per linear meter in 2026, for domestic production and QAR797 per linear meter for imports.

Chart 110. Qatar's Staircase Railings Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

5.1.6. Grills and Fencing

Grills and fences are used along boundary walls of real estate developments and along road medians and edges of footpaths. These are fixed to the wall or to the ground and prevent unauthorized access into the spaces that they enclose. Grills and fences are made from steel rods, sections, steel pipes and can be fabricated in a variety of shapes, sizes, designs, colors and patterns.

5.1.6.1. Demand-Side Analysis

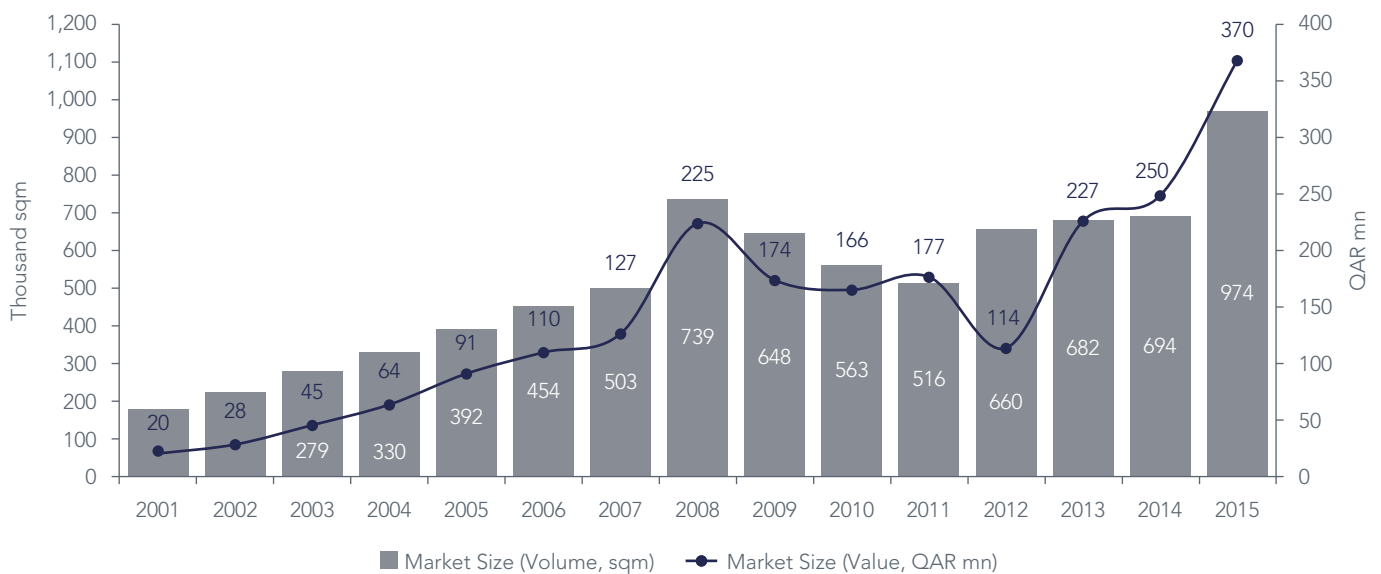
5.1.6.1.1. Historical and Current Market Size

The market size for grills and fencing has followed the real estate development trends as this product is used in all types of projects. Infrastructure development is also a key driver for grills and fencing.

The market size grew from 178,522sqm in 2001 to a peak of 739,395sqm (QAR225mn) in 2008, at a CAGR of 20.2%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 516,389sqm in 2011. Thereon, the market recovered and is estimated to have reached 973,942sqm in 2015 (QAR370mn).



Chart 111. Qatar's Grills and Fencing Demand, 2001 to 2015

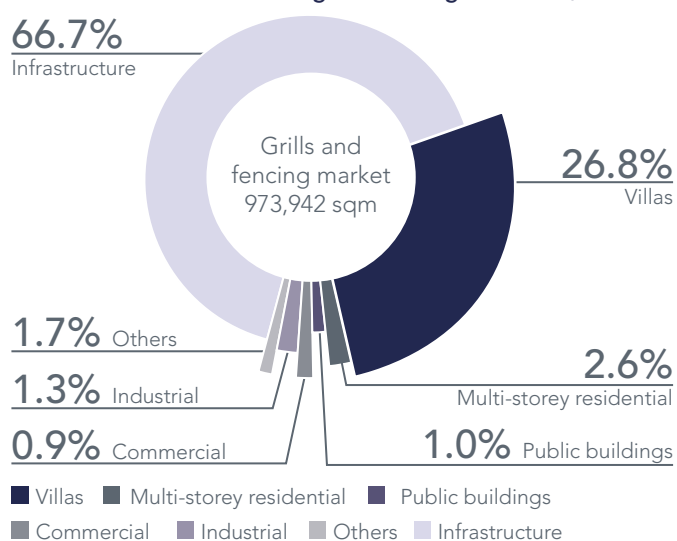


Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

5.1.6.1.2. Market Size Segmentation by Products

Infrastructure sector projects such as new road development and widening of existing roads form the largest segment (67%) followed by villas, which have a market share of 26.8%. Other asset classes such as multi-story residential and commercial buildings have small shares in the market.

Chart 112. Grills and Fencing Market Segmentation, 2015



Source: Team Analysis, MDPS Annual Bulletin of Building Permits and Completed Building Statistics, Primary Interviews

5.1.6.1.3. Demand Drivers

Demand for grills and fences is driven by real estate developments and road development projects. The customer segment comprises civil contractors undertaking construction contracts for real estate projects and infrastructure developments. Key influencers include engineers who design road projects and architects who design buildings.

5.1.6.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate and infrastructure projects that are either planned or underway. The market size is estimated to have reduced by 30.5% from 973,942sqm in 2015 to 677,039sqm in 2016.

Going ahead, the grills and fencing market is expected to grow from 677,039sqm in 2016 to an estimated 764,800 linear meter in 2026, registering a CAGR of 1.2%. In value terms, the market would grow at a CAGR of 3.7% from QAR256mn to reach QAR370mn in 2026.

Chart 113. Qatar's Grills and Fencing Demand Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

5.1.6.2. Trade Analysis

5.1.6.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 171,382sqm in 2001 to 335,527sqm (QAR75mn) in 2008. Thereafter, imports paced up to 492,455sqm (QAR119mn) in 2009, when due to slowdown, inexpensive imports were preferred over domestic production. Further, imports fell steeply in 2010 and 2011, increased to 579,636sqm in 2012 and thereon gradually reduced to 113,636sqm (QAR34mn) in 2015.

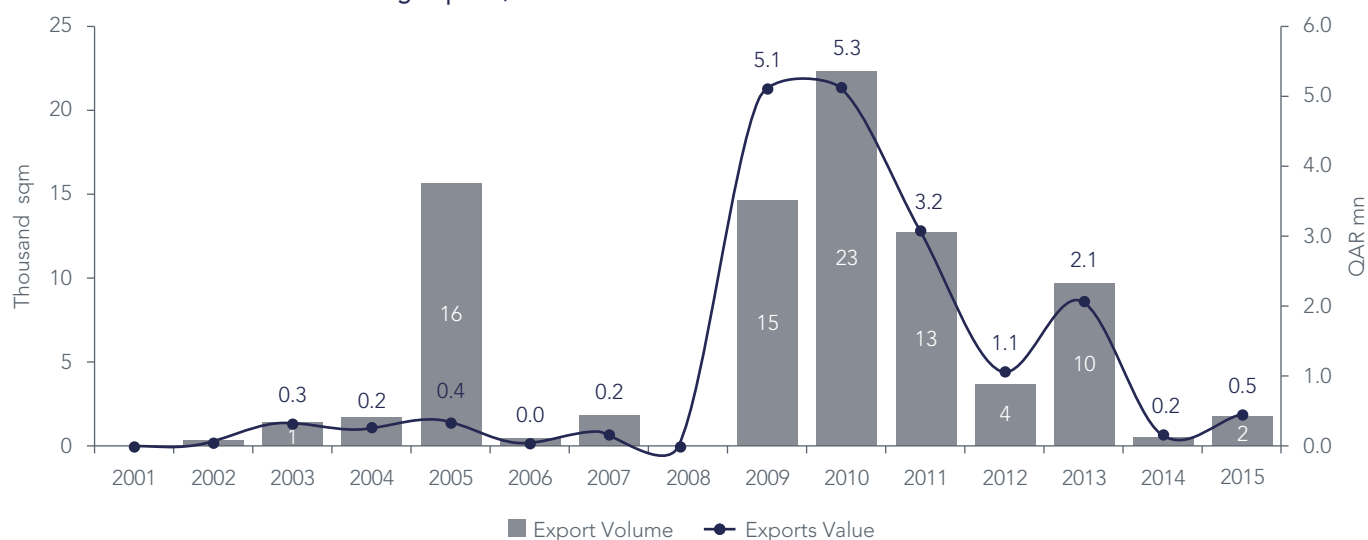
Chart 114. Qatar's Grills and Fencing Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: Analysis of historical export data indicates that exports have been highly irregular and small as compared to the domestic production. Across 2001 and 2015, the annual exports averaged at 5,933sqm of grills and fencing.

Chart 115. Qatar's Grills and Fencing Exports, 2001 to 2015

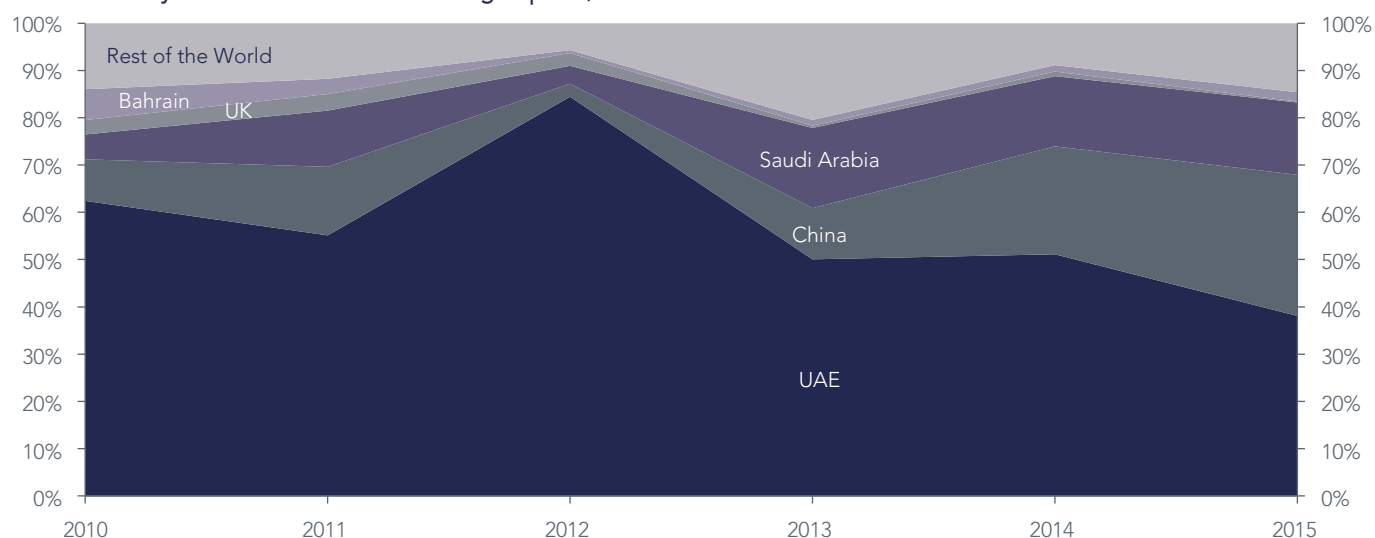


Source: ITC Trademap, Team Analysis

5.1.6.2.2. Trade by Source and Destination

Imports: The analysis of grills and fencing total imports, during the period 2010 to 2015, amounting to 76,408MT from 2010 to 2015, indicates that the UAE (66%), China (10%) and the KSA (9%) are the major sources of imports.

Chart 116. Key Sources of Grills and Fencing Imports, 2010 to 2015

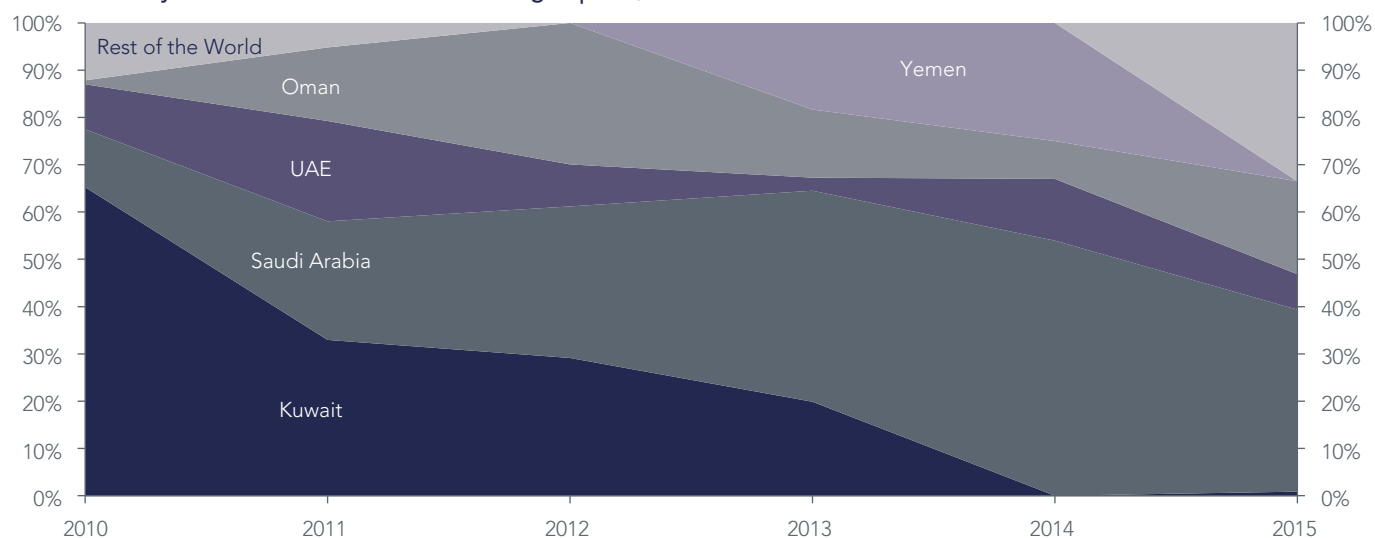


Source: ITC Trademap, Team Analysis

From 2010 to 2015, the UAE was a dominant source of imports; however, its share decreased from 84.5% in 2012 to 38.1% in 2015. During this period, the share of China and Saudi Arabia in imports into Qatar increased gradually to reach 29.9% and 15.3%, respectively.

Exports: The analysis of grills and fencing total exports from Qatar, during the period 2010 to 2015, amounting to 2,852MT indicates that Kuwait (43%), the KSA (24%) and the UAE (11%) are the major destinations for exports.

Chart 117. Key Destinations of Grills and Fencing Exports, 2010 to 2015



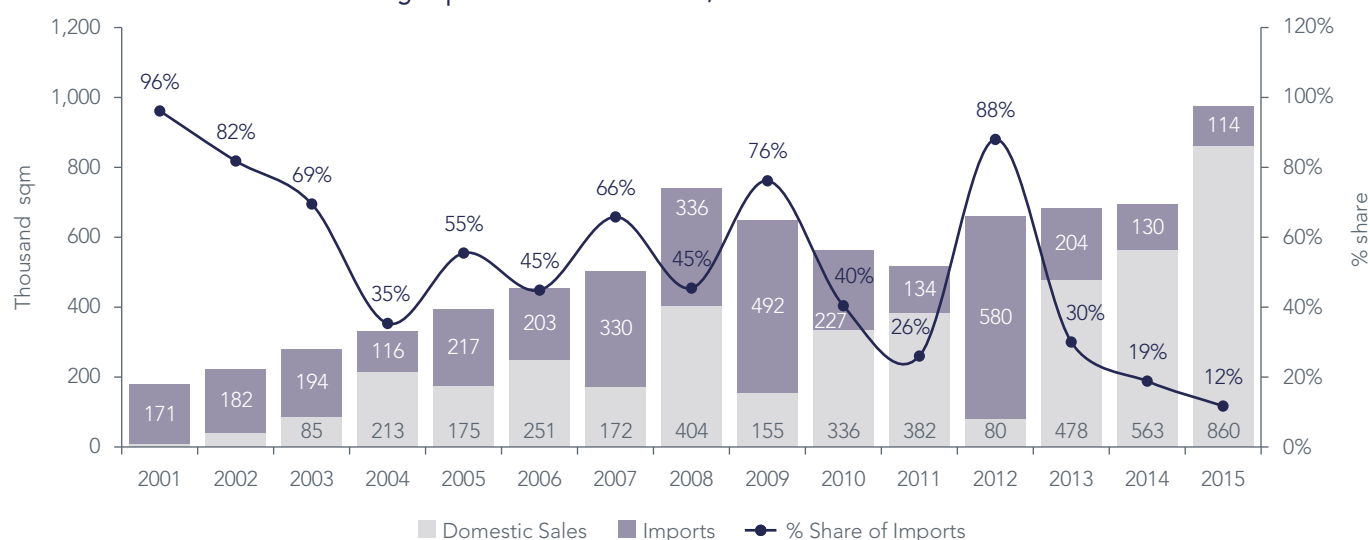
Source: ITC Trademap, Team Analysis

During 2010 to 2015, the exports of grills and fencing were to nearby countries, such as Kuwait, Saudi Arabia, the UAE, Oman and Yemen. In 2014 and 2015, most of the exports were to Saudi Arabia, while in 2010 and 2011, Kuwait was the leading destination for exports.

5.1.6.2.3. Share of Imports in Domestic Consumption

Share of imports in Qatar's grills and fencing market has reduced from an all-time high of 96% in 2001 to 12% in 2015, with the exception of intermediate years such as 2007, 2009 and 2012 when the imports serviced major portions of the market.

Chart 118. Qatar's Grills and Fencing Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

5.1.6.2.4. Assessment of Export Opportunities

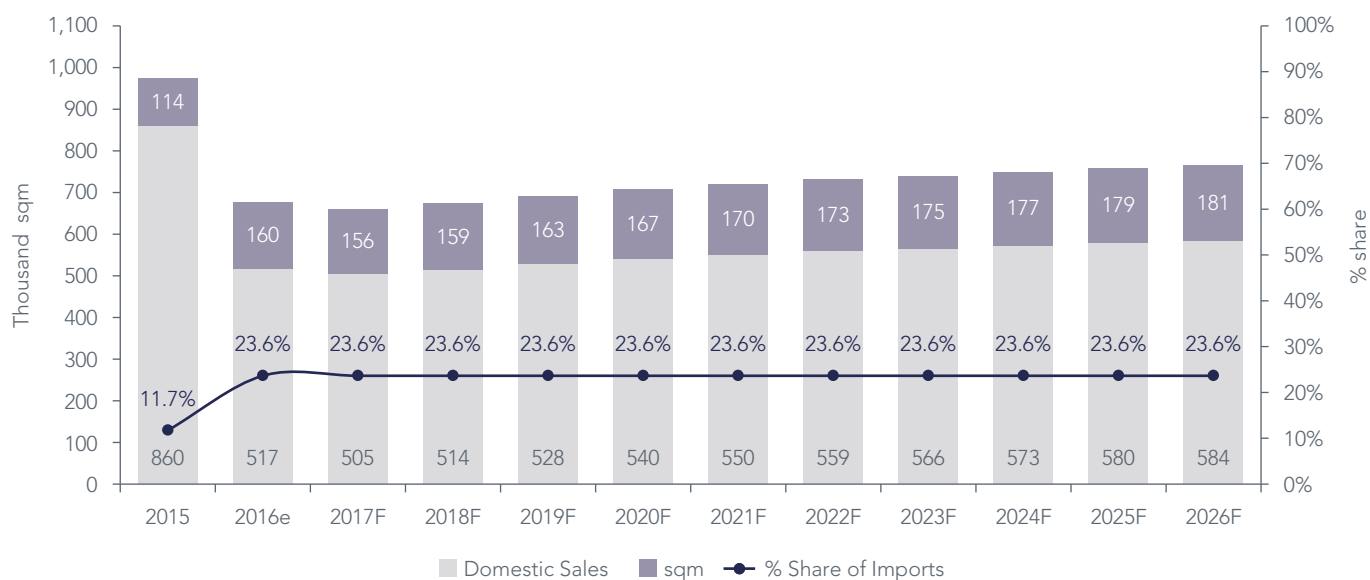
Primary interviews with the architectural steel fabrication units indicate that, due to a high cost of operations, Qatar's production is not cost competitive and hence, architectural steel fabrication units do not consider the export of grills and fencing as an attractive opportunity. Due to high cost of salaries, rent and raw material, production cost in Qatar is high as compared to other countries in the GCC region. Analysis of export data indicates that across the 2001 and 2015 period, exports of grills and fencing constituted only about 2.1% of the domestic production.

5.1.6.2.5. Trade Forecast

Imports: As the percentage of share of imports has fallen over the years, considering the near term trends, the import forecast of grills and fencing indicates that about 23.6% of the market requirements (in quantity terms) will be met by imports. Primary interviews with industry players indicates that imports are about 20% to 25% cheaper than the domestic production. Imports are likely to range from 159,837sqm in 2016 to 180,556sqm in 2026.



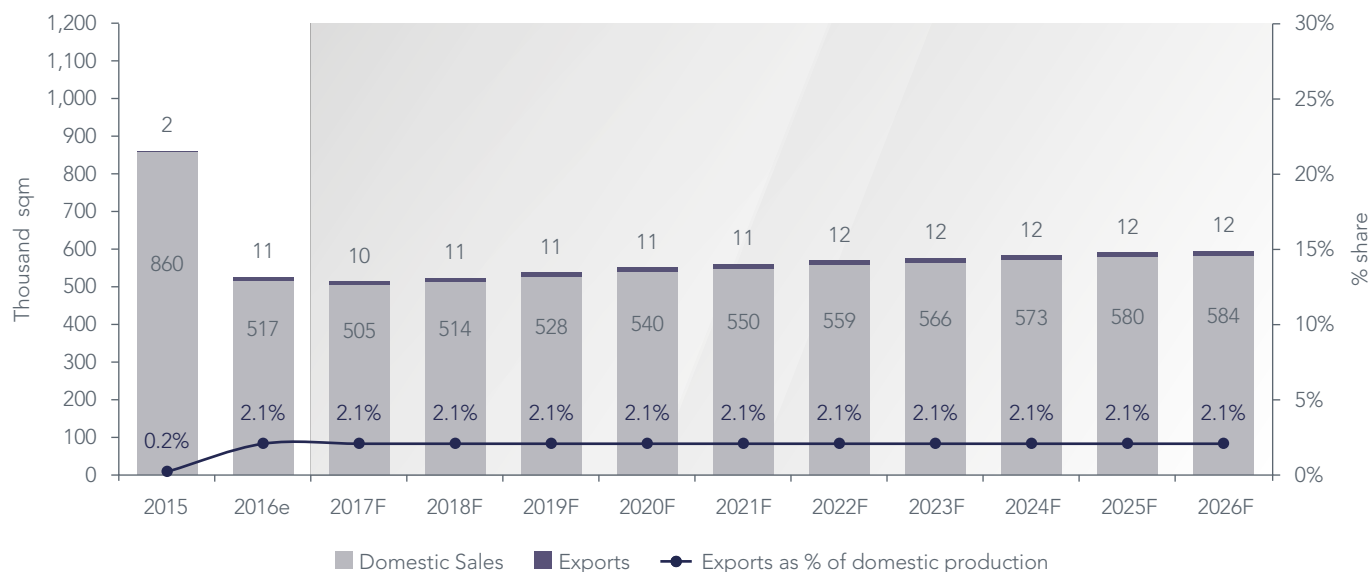
Chart 119. Qatar's Grills and Fencing Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The ten-year export forecast of grills and fencing indicates that exports may have a minor opportunity as only 2.1% of the domestic production may be exported. Exports are most likely to be limited to rare opportunities, e.g., Qatari civil contractors winning international projects and planning to source from Qatar-based fabricators. Exports are likely to range from 10,725sqm in 2016 to 12,115sqm in 2026.

Chart 120. Qatar's Grills and Fencing Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

5.1.6.3. Pricing Analysis

The selling prices of grills and fencing are quoted on a per sqm basis and vary as per the design, size, paint color and other specifications. Currently, the 2016 domestic prices for grills and fencing are in the range of QAR300 to QAR700 per sqm (average of QAR400 per sqm). On average, imports are 23.1% cheaper than the domestic production. Considering the inflation rates in Qatar, the average price is expected to reach QAR511 per sqm in 2026 for domestic production and QAR393 per sqm for imports.

Chart 121. Qatar's Grills and Fencing Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

5.1.7. Supply-Side Analysis

5.1.7.1.1. Market Structure

The structure of Qatar's architectural steel fabrication market that comprises about 467 firms is fragmented. Based on the capacities of the architectural steel fabrication firms, they can be classified as large, medium and small. Most architectural fabrication units have capabilities to undertake both architectural steel fabrication and structural steel fabrication works.

Small-sized Firms



Based on insights from primary interviews, these firms have capacities not greater than 380MT per annum. These units have less than 10 employees and 70% of their capacities focus on architectural steel fabrication works comprising products such as entrance gates, decorative doors, steel staircase railing and grill fencing. Qatar has 194 such firms that collectively control 20% share of the market.

Medium-sized Firms



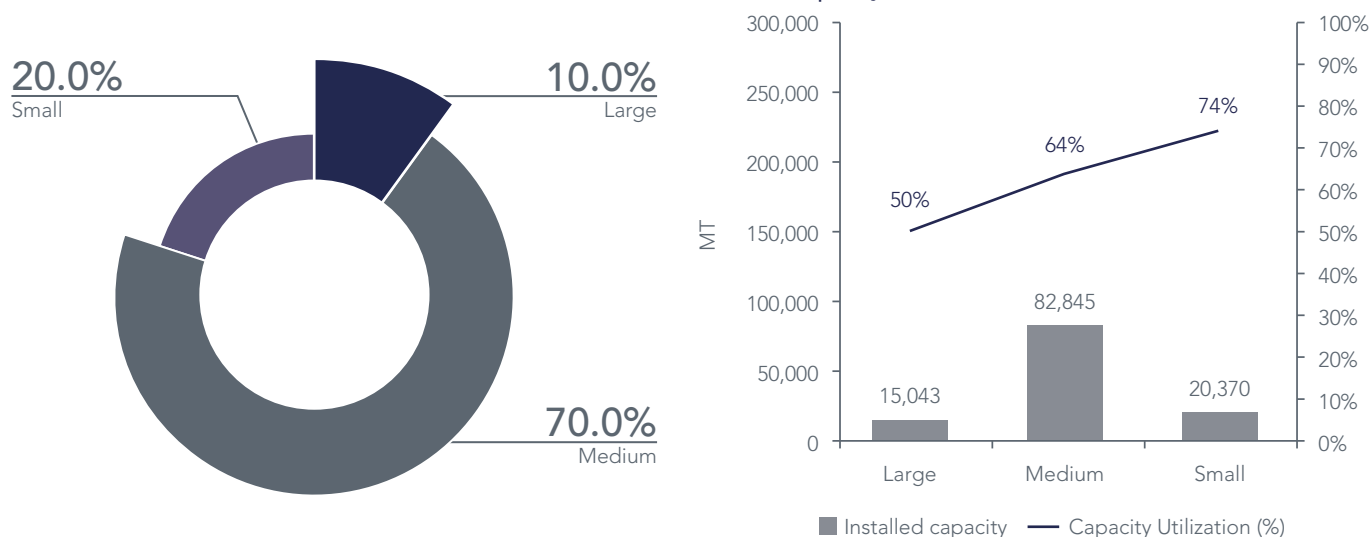
Qatar is home to 263 medium-sized firms, each having an average capacity greater than 380MT per annum and less than 12,000MT per annum of steel fabrication per month. The medium-sized firms collectively have 70% share of the market in volume terms. In case of medium-sized firms, on average, 17.5% of the capacity is dedicated to architectural steel fabrication works.

Large-sized Firms



Qatar's ten leading firms form the group of large-sized firms. They collectively have 10% share of the architectural steel fabrication market in terms of quantity. On an average, 7.5% of their capacity focuses on architectural steel fabrication works and the rest (92.5%) is dedicated to structural steel fabrication jobs.

Chart 122. Qatar's Architectural Steel Fabrication Market structure and Capacity Utilization



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

In terms of products and services, the leading players have well-developed capabilities and focus on structural steel fabricating works. Architectural steel fabrication products such as doors, railings, grills and fencing are ancillary products to the structural steel fabrication job orders taken by the large firms.

With regards to the architectural steel fabrication products, small-sized firms have an average capacity utilization rate of 74.1%, followed by medium-sized firms at 63.8%, with large firms lagging behind at 50.2%. The overall industry capacity utilization rate is 63.8%.

Table 15. Architectural Steel Fabrication Market Structure Snapshot

Architectural Steel Fabrication	Units	Large	Medium	Small	Total
Number of players	Number	10	263	194	467
Average monthly capacity per player	MT	1,671.4	150.0	12.5	
Average % share of capacity used for architectural works	%	7.5%	17.5%	70%	
Architectural fabrication average capacity p.a. per player	MT	1,504	315	105	
Capacity per category – Architectural works	MT	15,043	82,845	20,370	118,258
Market share	%	10%	70%	20%	100%
Sales	MT	7,548	52,838	15,097	75,483
Capacity utilisation	%	50.2%	63.8%	74.1%	63.8%

Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

5.1.7.1.2. Profiling of Key Domestic Players

Table 16. Architectural Steel Fabrication: Key Domestic Players¹⁰⁴

Company	Year of establishment	Products/Projects	Installed capacity and units
Gulf Steel	1989	<ul style="list-style-type: none"> Architectural steel fabrication for metro rail, stadium and airport Industrial, commercial, architectural works 	12,000MT per annum
Qatar Metal Industries, UAE	2007	<ul style="list-style-type: none"> Steel doors (fire and non-fire rated) 	10,000sqm per month
Steel Master	2011	<ul style="list-style-type: none"> Hot-rolled steel structures Warehouses shades Staircase Gates, grills, handrail, cladding, hangers Erection of structural steel works 	6,000MT per annum
Hadadco	2005	<ul style="list-style-type: none"> Entrance gates Decorative doors Staircase Handrail, grills and fencing Other decorative parts. 	3,000sqm per month
Style engineering	1996	<ul style="list-style-type: none"> Railing Doors Tanks Pipeline and mechanical engine works 	1,000sqm per month
Drabzin	1991	<ul style="list-style-type: none"> Entrance gates Decorative doors Staircase Handrail, grills and fencing Other decorative parts 	800 to 1,000sqm per month
Jersey decoration	1991	<ul style="list-style-type: none"> Entrance gates Decorative doors Staircase Handrail, grills and fencing Other decorative parts 	NA
Al Einkiaz & Pilot Trading and Contracting Company	1976	<ul style="list-style-type: none"> Fire rated doors Handrails and fencing Rolling shutters Structural steel works Pre-fabricated building Aluminum and glass works Other aluminum works 	NA

¹⁰⁴ Primary Interviews, company websites

5.1.7.1.3. Business Model Analysis

The architectural steel fabrication market is dominated by small- and medium-sized players. They are flexible, agile in terms of their business approach and can focus on a varied mix of products, projects and customers.

Some players such as Hadadco and Drabzin focus exclusively on architectural steel fabrication works. They focus on villa projects, serve the local market with products such as entrance gates, decorative gates and staircase handrails, and have showrooms at prominent areas in Doha.

Other players such as Al Einkiaz, Gulf Steel and Steel Master focus on both architectural and structural works. Some players such as JAFCO and Qore Aluclad focus on architectural steel fabrication works and architectural aluminum fabrication works.

Given the low-entry barriers, widespread application of steel and a large market size, architectural steel fabrication has been an attractive sector for Qatari entrepreneurs. With several firms operating in the market and each targeting the same project, competition to win contracts is intense.

5.1.7.1.4. Domestic Production Competitiveness

Access to inexpensive raw materials and a large market underlines the profitability and feasibility of any industrial venture. The key factors that influence the competitiveness of domestic production of architectural steel fabrication units include raw material, labor, market size and the impact of competition.

Raw Material: Qatar does not have domestic production of raw materials such as steel plates, sheets and rods. The domestic raw material production capacity is underdeveloped, limited to small sections (less than 80mm). Hence, all architectural steel fabrication units in Qatar depend on imports to meet their raw material needs.

Our primary research indicates that raw materials are procured from countries such as China, India, the KSA, Turkey and the UAE. Expensive raw materials significantly impact the cost of domestically produced finished goods.

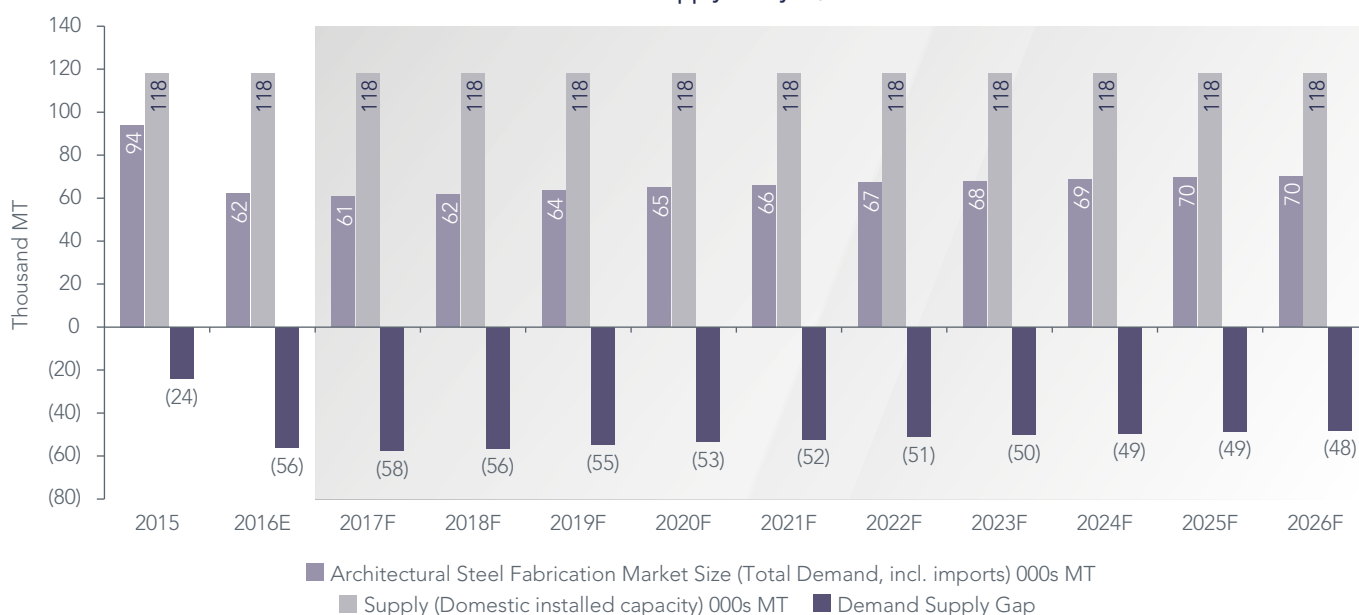
High Operational Expenses: Our primary interviews indicate that operational costs are significantly higher in Qatar than in nations exporting to Qatar, i.e., China, India, the UAE, Turkey, etc. This adversely affects the price competitiveness of domestic production. Operational expenses are affected by high rents for accommodation, high salaries and high rents for non-residential spaces that increases the fixed expenses.

Number of Players: Due to the fragmented nature of the market and the large number of players (467 players), steel fabrication market in Qatar is characterized by fierce competition and price sensitivity.

5.1.8. Demand-Supply Analysis

Considering the 467 firms operating in the market, the installed capacity is 118,258MT per annum. This does not include assumptions for new players having plans to enter the market that have not been announced so far. Comparing with market size estimates (including imports projection), the demand-supply gap points toward an oversupply of 53,295MT in 2020 to 47,993MT in 2026.

Chart 123. Qatar's Architectural Steel Fabrication Demand-Supply Analysis, 2014 to 2026



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015, ITC Trademap

5.1.9. Regulatory Analysis

Qatar Construction Specification 2014¹⁰⁵: As steel fabrication products are used in the construction sector, their production, installation and usage are mainly regulated by the following sections of Qatar Construction Specifications (QCS) 2014.

a) QCS 2014 Section 16: Structural Steelworks

This section has general instructions and regulations related to materials, drawing, fabrication, welding, bolting, accuracy of fabrication, erection, accuracy of erected steel work and protected treatment.

b) QCS 2014 Section 17: Metal Work

This section has general instructions and regulations related to material classification, metal doors and windows, architectural metalwork, light metal support, cladding support and workmanship.

In addition to the above, steel fabrication units are expected to be familiar with other relevant sections of the QCS that regulate construction activities having an interface with steel fabrication products. These sections include section 13 (Masonry), section 14 (Roofing), section 4 (Foundation and retaining structures) and section 5 (Concrete).

Ministry of Environment: Steel fabrication units need to be approved by the Ministry of Environment.

Civil Defense Department (Ministry of Interior): All building material products need an approval from the Civil Defense Department (Ministry of Interior) as per Emiri Decree No. 9/2012. Steel fabrication units have to comply with applicable fire safety norms.

ISO Certification: Obtaining ISO certifications (Quality 9001, OHSAS 18001 and Environment 14,001) are vital for tendering purposes.

Apart from the above, all prospective entrepreneurs need to follow applicable laws on company registration, industrial license and obtaining land and building permissions for setting up a steel fabrication facility in Qatar.



¹⁰⁵ QCS 2014

5.1.10. SWOT Analysis and Michael Porter's Five-Force Analysis

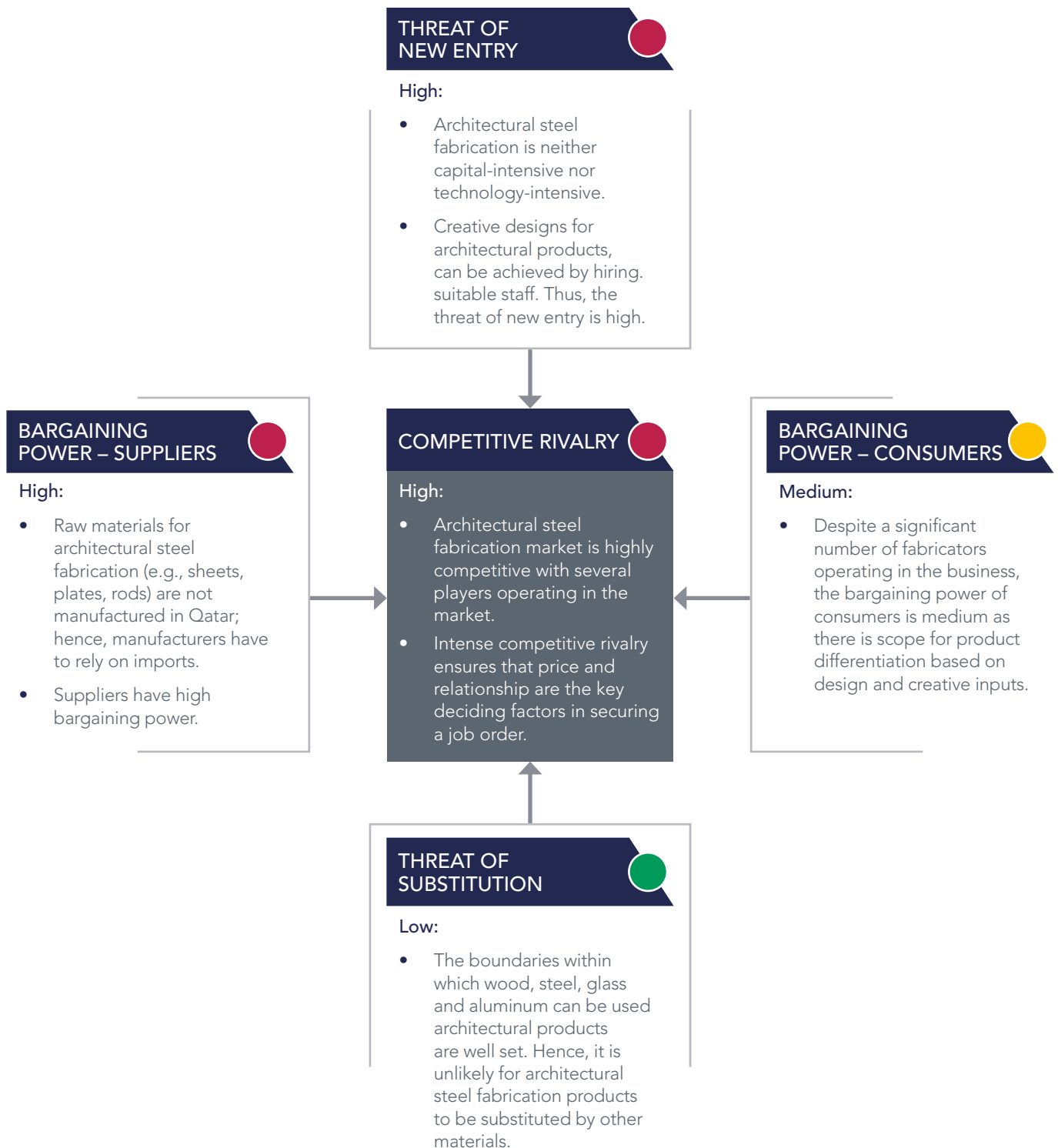
5.1.10.1. SWOT Analysis

Figure 17: Architectural Steel Fabrication SWOT Analysis



5.1.10.2. Michael Porter's Five-Force Analysis

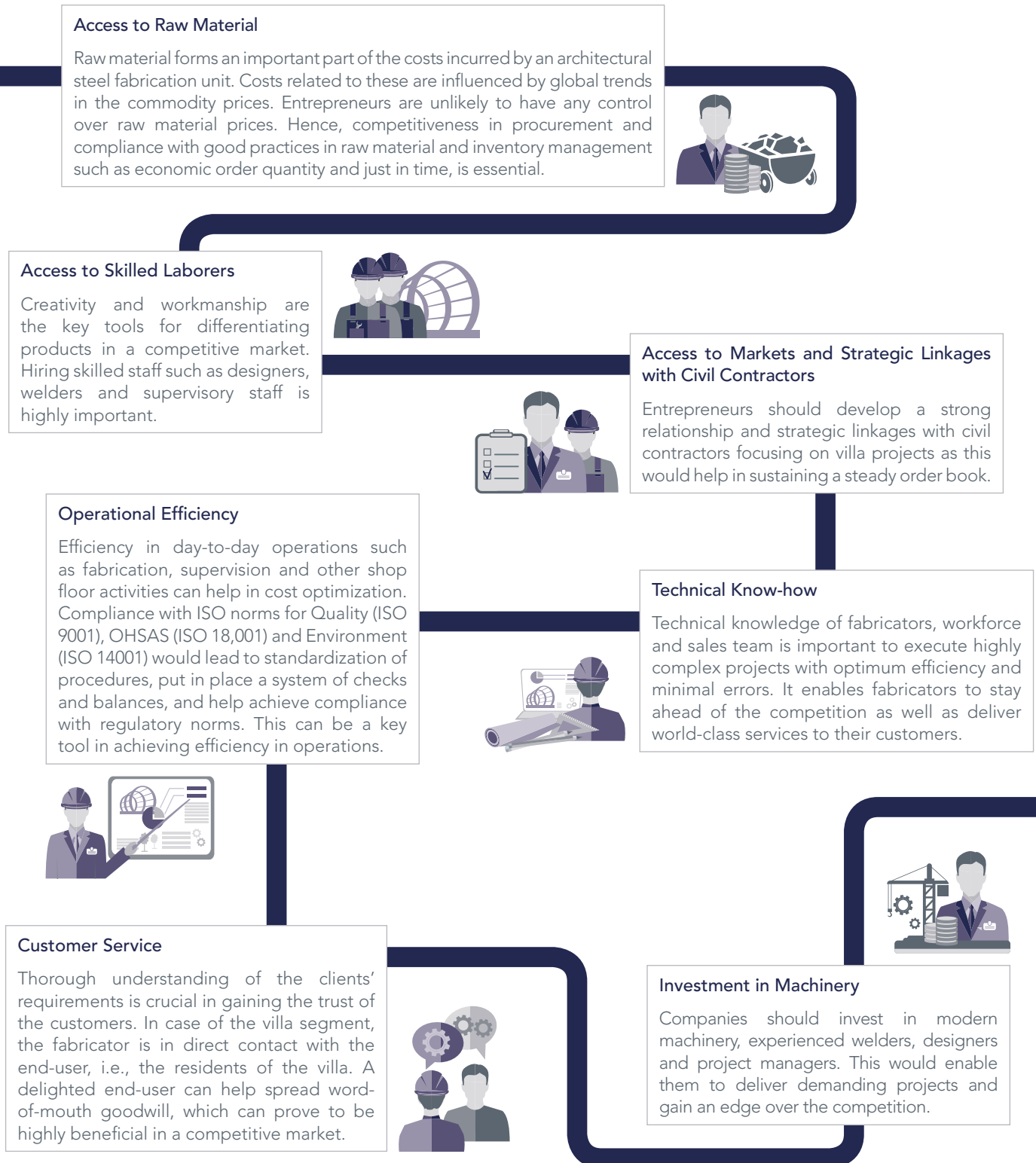
Figure 18: Michael Porter's Five Forces Model (Architectural Steel Fabrication)

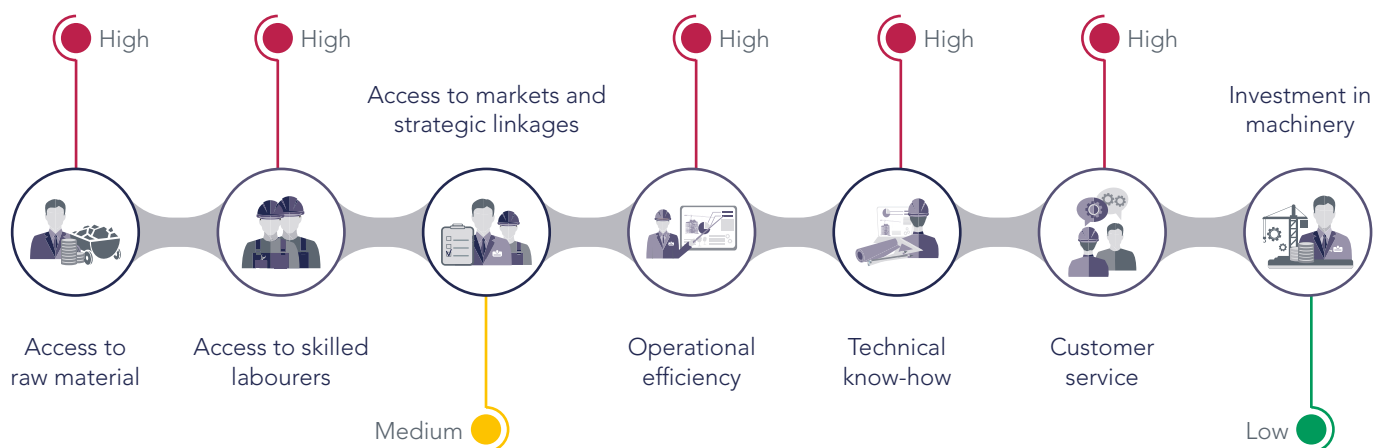


5.2. Critical Success Factors

Critical Success Factors include the following:

Figure 19: Critical Success Factors - Architectural Steel Fabrication





5.3. Outlook

Qatar's growing real estate sector offers opportunities for new units in the architectural steel fabrication market in products such as entrance gates, decorative doors, staircase handrails, grills and fencing.

The architectural steel fabrication formed a sizable portion (12.4%) of the structural metal products sector in 2015. In terms of domestic production value architectural steel fabrication has 11.7% share of the overall structural metal products sector. Villas would account for 45% of Qatar's upcoming real estate development of 78.9mn sqm over 2016 and 2026. Villas are likely to be a prime driver for most architectural products. On the back of strong demand drivers, the market is expected to grow at a CAGR of 3.7% from QAR629mn in 2016 to an estimated QAR909mn in 2026¹⁰⁶

The given market size and a moderate pace of growth offer an opportunity for new players to tap into 806MT worth of average incremental business every year from 2017 to 2026, subject to competitive challenges. Owing to this, opportunities exist for one medium-sized player (1,800MT per annum running at 80% utilization) dedicated to architectural steel fabrication works, to enter the market every two years.

In terms of challenges, the market is likely to remain significantly competitive and price sensitive. Heavy dependence on imports for procurement of raw materials and high operational expenses (salaries, rent, etc.) as compared to those in other countries such as the UAE and the KSA would limit export potential to rare opportunities¹⁰⁷. Imports are likely to remain cheaper as compared to domestic production and further heighten the challenges.

In the medium to long term, the strengths and the opportunities outweigh the weaknesses and threats due to large market size, upcoming projects pipeline in Qatar, fragmented customer base (villa projects) and the localized nature of the product.

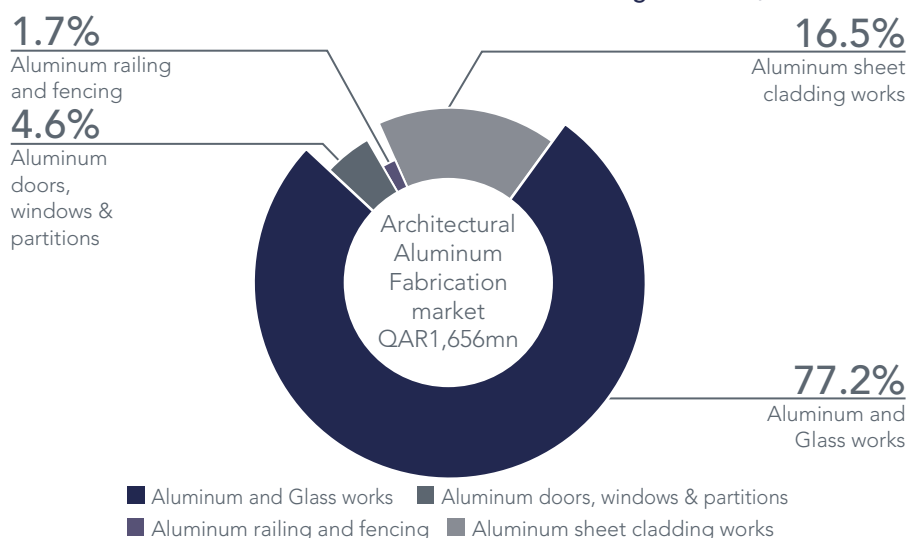
6. ARCHITECTURAL ALUMINUM FABRICATION

6.1. Qatar Market Overview

Architectural aluminum fabrication emerges as the second largest segment of the structural metal products sector. It serves the varied needs of real estate asset developments across asset classes such as villas, multi-story buildings, commercial developments, public buildings and industrial facilities. The architectural aluminum fabrication market constituted a sizable portion (21.4%) of the structural metal products sector in 2015. In terms of domestic production value, it has 18.9% share of the overall structural metal products sector. Key products in the architectural aluminum fabrication segment are:

- Aluminum and glass fabrication works
- Aluminum sheet cladding
- Aluminum doors, windows and partitions
- Aluminum railings and fencing

Chart 124. Architectural Aluminum Fabrication Market Segmentation, 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

The 2015 architectural aluminum fabrication market is estimated at QAR1,656mn¹⁰⁸. Real estate asset classes, such as villas and multi-story residential developments, commercial buildings and public buildings are likely to be the prime driver of architectural products. Key products include aluminum and glass works (77.2% share), aluminum doors, windows and partitions (4.6% share), aluminum railings and fencing (1.7% share) and aluminum sheet cladding works (16.5% share). Going forward, the market is expected to grow at a CAGR of 4.4% from QAR893mn in 2016 to reach an estimated QAR1,375mn in 2026.

The structure of Qatar's architectural aluminum fabrication market that comprises about 70 firms is fragmented. Based on the capacities of the firms, they can be classified as large, medium and small. Large-sized players have 39.3% share of the sales by domestic players, followed by medium-sized players and small-sized players having 37.9% and 22.8% share, respectively. Most large- and medium-sized

¹⁰⁸ Team Analysis

architectural aluminum fabrication firms have capabilities to undertake the fabrication of all types of architectural aluminum products, such as aluminum and glass works, aluminum sheet cladding, doors, windows and partitions, staircase railings and fencing, while small firms are restricted to less-intensive fabrication works and assembly of imported aluminum and glass works.

Qatar does not produce glass, which is a major raw material consumed in aluminum and glass works. Similarly, Qatar does not produce aluminum sheets that are used to manufacture aluminum composite panels used in aluminum sheet cladding works. Due to high salaries, rents and cost of raw materials, production cost in Qatar is higher than in other countries in the GCC region. Therefore, aluminum and glass works and aluminum sheet cladding works are localized products and are not exportable.

Other products, such as aluminum doors, windows and partitions and aluminum staircase railing, have export potential as they can source aluminum extrusion profiles from Qatar-based extruders.

The subsequent sections of the report provide a detailed market analysis of each of the product segments listed above.

6.1.1. Aluminum and Glass Works

Aluminum extrusion profiles are used along with glass to fabricate various products, such as aluminum and glass doors, aluminum and glass windows, curtain walls and skylights. These products are used in all types of real estate asset classes, such as villas, multi-story residential buildings, commercial buildings and public buildings. Raw materials include aluminum extrusion profiles, glass, silicon-based fillers, frames and fixing accessories. As compared to steel, aluminum is lightweight and does not rust. It can be delivered in various colors and finishes and hence, is a commonly used metal for architectural products.

6.1.1.1. Demand-Side Analysis

6.1.1.1.1. Historical and Current Market Size

Aluminum and glass works market has followed the real estate development trends. The market size grew from 464,932sqm (QAR173mn) in 2001 to 1,609,586sqm (QAR1,042mn) in 2008, implying a CAGR of 19.4%. The sizable expansion in 2006 (market size of 2,476,090sqm) could be attributed to the demand arising from Asian Games 2006¹⁰⁹ and related developments. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years, which reduced the market size to 805,083sqm in 2010. Thereafter, the market recovered and is estimated to have reached 1,892,844sqm in 2015 (QAR1,279mn).

Chart 125. Qatar's Aluminum and Glass Works Demand, 2001 to 2015



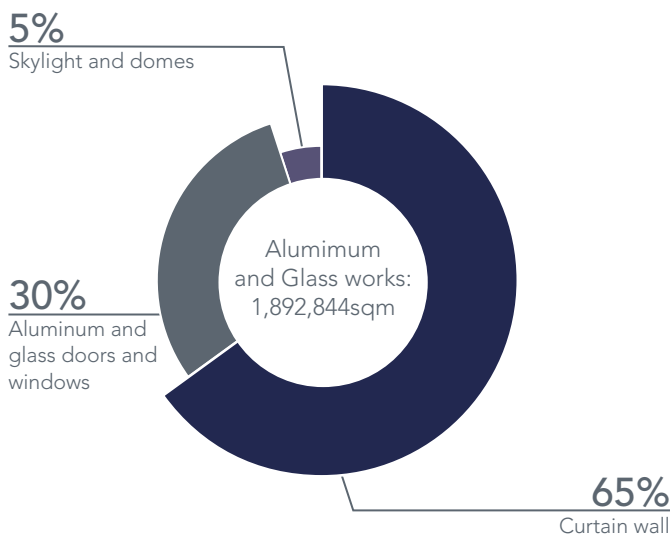
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

¹⁰⁹ Primary Interviews

6.1.1.1.2. Market Size Segmentation by Products

Curtain walls emerge as the largest segment in the aluminum and glass works sector, accounting for 65% (1,230,349sqm) of the market demand, followed by aluminum and glass doors and windows at 30% (567,853sqm). Skylight and domes have a small share of 5% (94,642sqm).

Chart 126. Architectural Aluminum Fabrication Market Segmentation, 2015



Source: Team Analysis, Primary Interviews

Curtain walls are used as façades, mostly in multi-story residential buildings, commercial developments and public buildings. Aluminum and glass doors are commonly used in non-residential developments whereas aluminum and glass windows are used across all types of real estate asset classes. Skylights and domes are used as a part of the roof covering atriums and courtyards in commercial buildings.

6.1.1.1.3. Demand Drivers

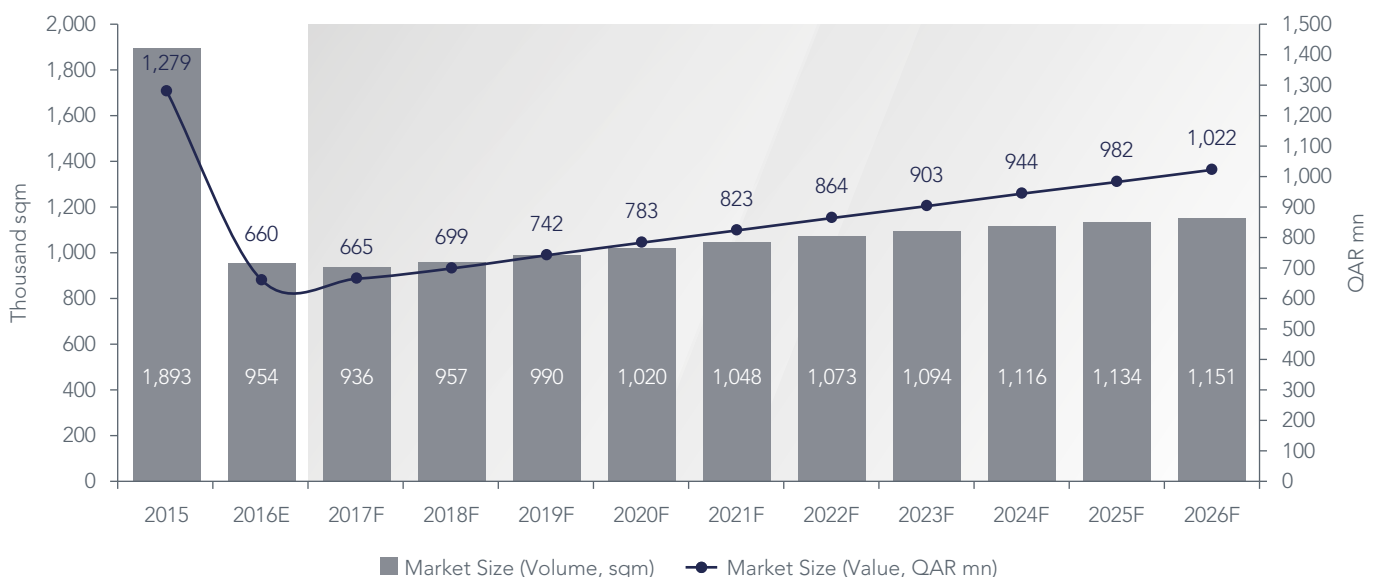
The demand for aluminum and glass works is driven by requirements from real estate development projects that include various types of asset classes, such as villas, multi-story residential buildings, commercial developments, public buildings and industrial facilities. Civil contractors undertaking construction contracts constitute the customer segment. Architects and interior designers who design aluminum and glass works are the key influencers.

6.1.1.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 49.6% from 1,892,844sqm in 2015 to 953,775sqm in 2016.

Going forward, the aluminum and glass works market is expected to grow from 953,775sqm in 2016 to an estimated 1,151,172sqm in 2026, registering a CAGR of 1.9%. In value terms, the market would grow at a CAGR of 4.5% from QAR660mn to reach QAR1,022mn in 2026.

Chart 127. Qatar's Aluminum and Glass Works Demand Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

6.1.1.2. Trade Analysis

6.1.1.2.1. Historical Trade Analysis

Imports have followed the market size and real estate development trends. Primary interviews with aluminum and glass fabricators indicate that 25% of the market, in value terms, was serviced by imports between 2001 and 2015. The key sources of imports are the UAE, the Saudi Arabia and other GCC region countries. This implies that fabricators from UAE, Saudi Arabia bagged orders for providing curtain walls, aluminum and glass doors etc. for projects in Qatar.

Chart 128. Qatar's Aluminum and Glass Works Imports, 2001 to 2015

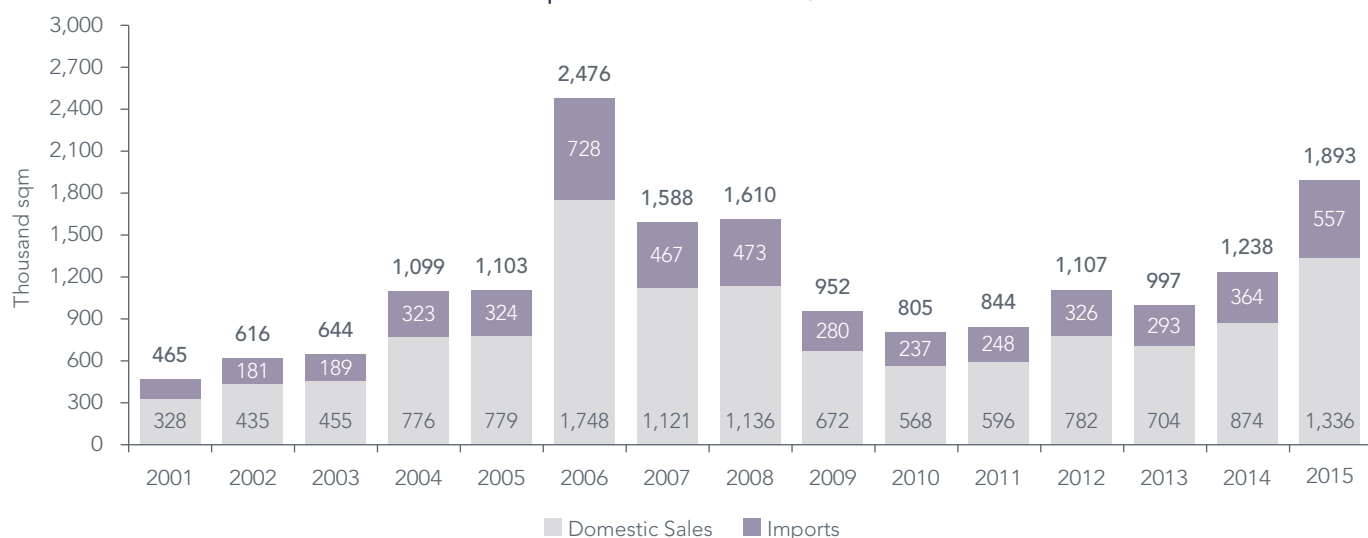


Source: ITC Trademap, Team Analysis

6.1.1.2.2. Share of Imports in Domestic Consumption

Imports account for 29.4% of Qatar's market in quantity terms as imports is about 20% cheaper than domestic production¹¹⁰. Imports include products from the aluminum and glass product segment, such as curtain wall, aluminum and glass doors, that are fabricated in countries such as the UAE and Saudi Arabia, and sold to projects in Qatar.

Chart 129. Qatar's Aluminum and Glass Works Imports Vs Domestic Sales, 2001 to 2015



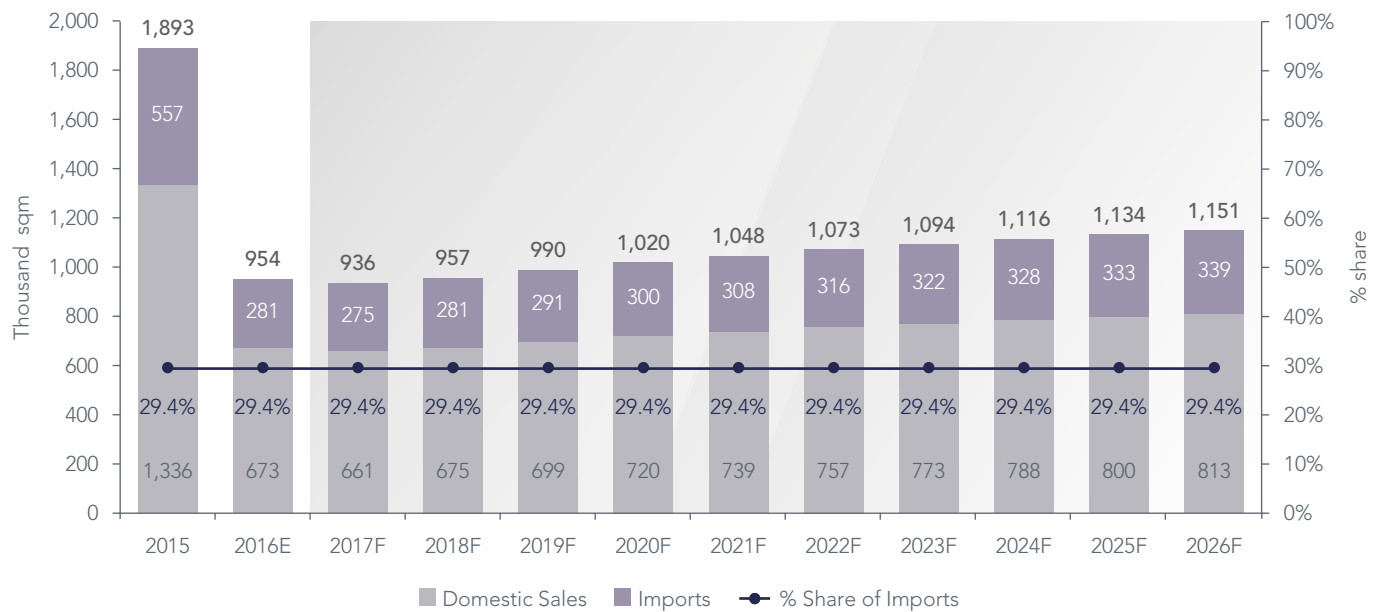
Source: Team Analysis, ITC Trademap

¹¹⁰ Primary Interviews

6.1.1.2.3. Trade Forecast

Imports: The import forecast of aluminum and glass works indicates that about 29.4% of the market requirements (in quantity terms) will be met by imports. Primary Interviews indicate that imports are about 20% cheaper than domestic production. Imports are likely to range from 280,522sqm in 2016 to 338,580sqm in 2026

Chart 130. Qatar's Aluminum and Glass Works Import Forecast, 2015 to 2026

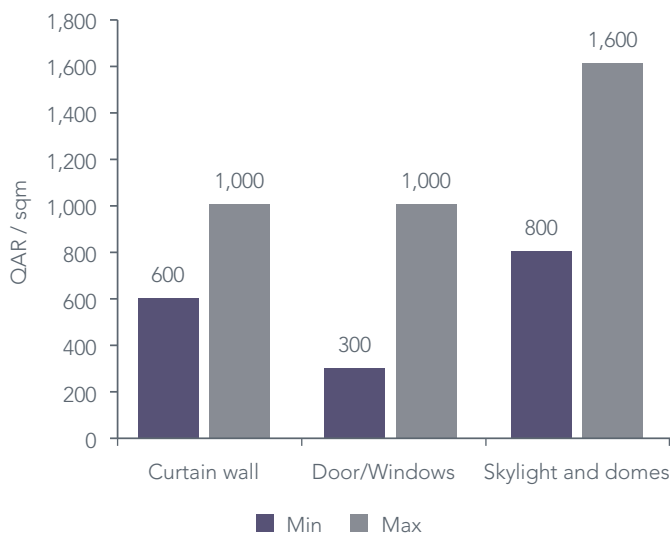


Source: Team Analysis, ITC Trademap

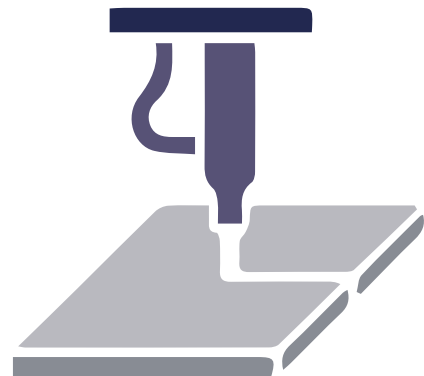
6.1.1.3. Pricing Analysis

The selling prices of aluminum and glass works are quoted on the basis of per sqm and vary as per the product type, size, design, detailing, color and other specifications. The price ranges for key products are given below.

Chart 131. Price Range of Aluminum and Glass Works



Source: Team Analysis, Primary Interviews



On average, imports are 20% cheaper than domestic production. Considering the inflation rates in Qatar, the average prices are expected to reach QAR943 per sqm for domestic production and QAR754 per sqm for imports in 2026.

Chart 132. Qatar's Aluminum and Glass Works Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

6.1.2. Aluminum Sheet Cladding Works

Aluminum sheets are used as a cladding material on building facades. These are commonly used in combination with aluminum and & glass curtain wall products. Aluminum and glass fabricators opine that the metallic luster of aluminum sheet cladding improves the aesthetic appeal of the buildings, giving it a modern appearance. These products are commonly used in commercial developments and public buildings. Raw materials include either finished aluminum sheets (solid aluminum sheet or aluminum composite panels), silicon-based fillers, and fixing accessories.

6.1.2.1. Demand-Side Analysis

6.1.2.1.1. Historical and Current Market Size

Real estate development trends have influenced the aluminum cladding works market. The market size grew from 232,466sqm (QAR37mn) in 2001 to 804,793sqm (QAR222mn) in 2008, implying a CAGR of 19.4%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years, which reduced the market size to 402,541sqm in 2010. Thereafter, the market recovered gradually and is estimated to have reached 946,422sqm in 2015 (QAR273mn).

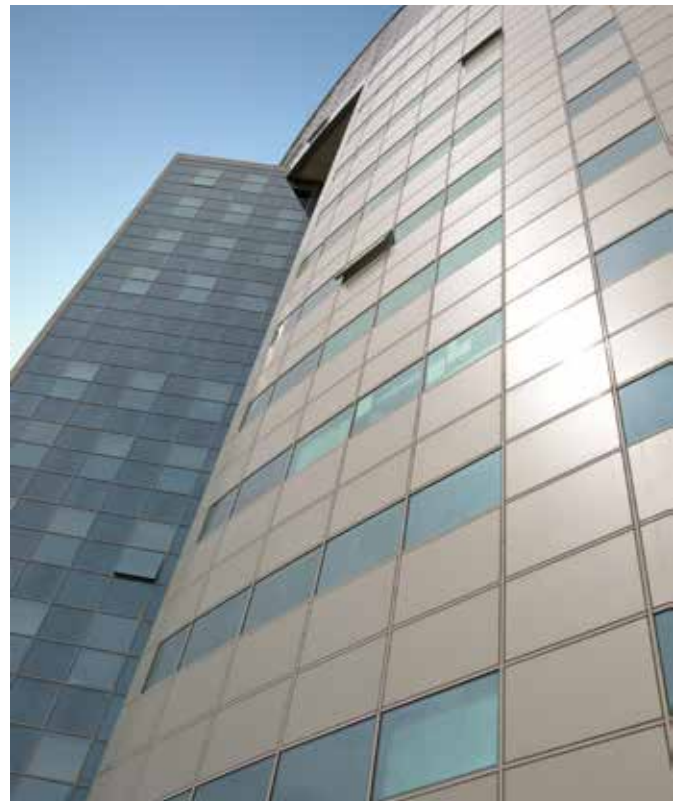
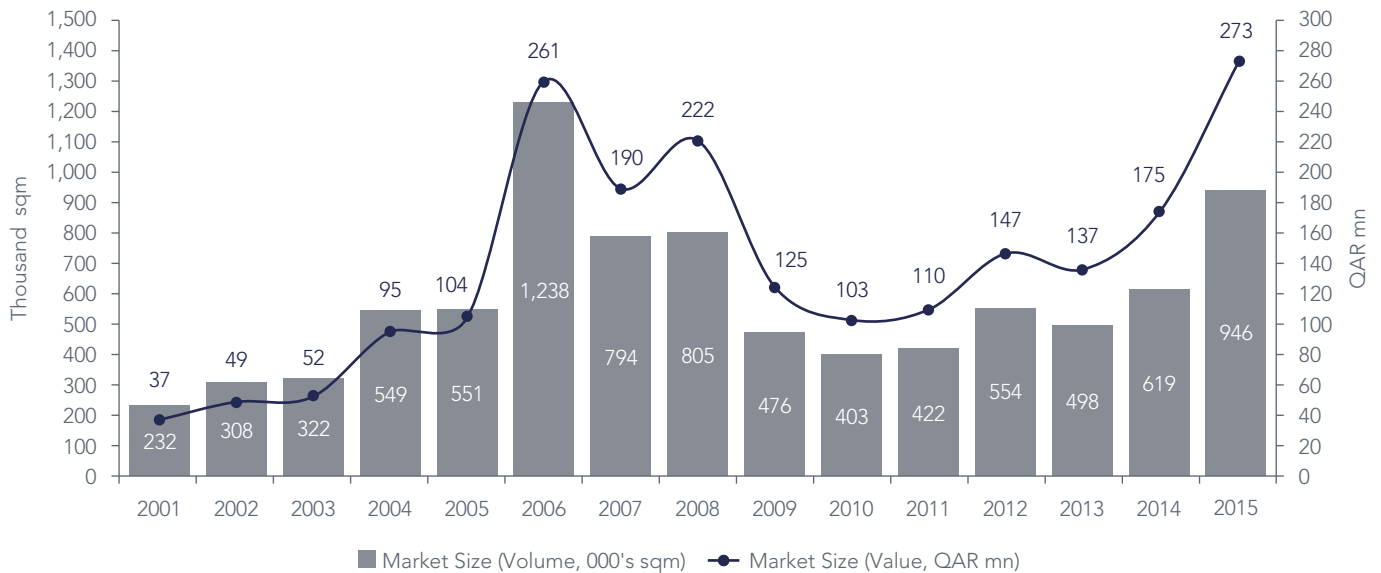


Chart 133. Qatar's Aluminum Sheet Cladding Works Demand, 2001 to 2015



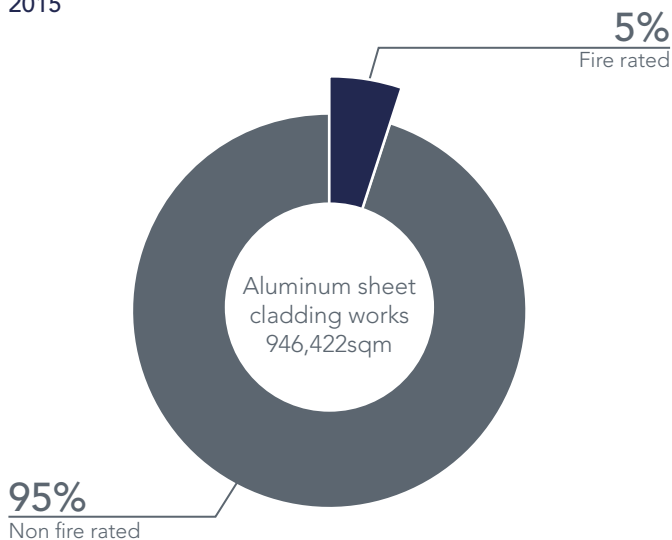
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

6.1.2.1.2. Market Size Segmentation by Products

Most commonly used are non-fire rated aluminum sheet cladding also commonly known as aluminum composite panel cladding that has 95% market share.

Fire-rated aluminum cladding is a small segment used in specified areas that are prone to fire. Solid aluminum panels are used in fire-rated aluminum sheet cladding. Solid aluminum panels have aluminum sheets on the either side of a corrugated sheet, which gives it the desired thickness.

Chart 134. Aluminum Sheet Cladding Market Segmentation, 2015



Source: Team Analysis, Primary Interviews

6.1.2.1.3. Demand Drivers

The demand for aluminum sheet cladding works is mainly driven by commercial developments, public buildings and multi-story residential buildings. Civil contractors undertaking construction contracts constitute the customer segment. Architects who design buildings are the key influencers.

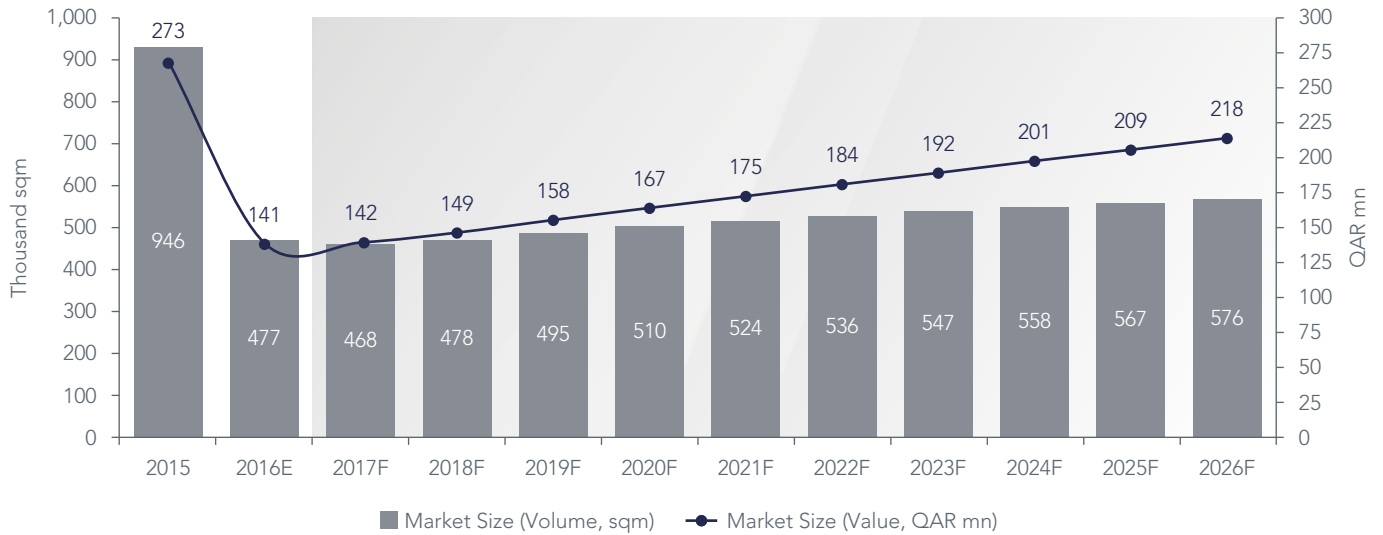
6.1.2.1.4. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 49.6% from 946,422sqm in 2015 to 476,888sqm in 2016.

Going forward, the aluminum sheet cladding works market is expected to grow from 476,888sqm in 2016 to an estimated 575,586sqm in 2026, registering a CAGR of 1.9%. In value terms, the market would grow at a CAGR of 4.5% from QAR141mn in 2016 to reach QAR218mn in 2026.



Chart 135. Qatar's Aluminum Sheet Cladding Works Demand Forecast, 2015 to 2026



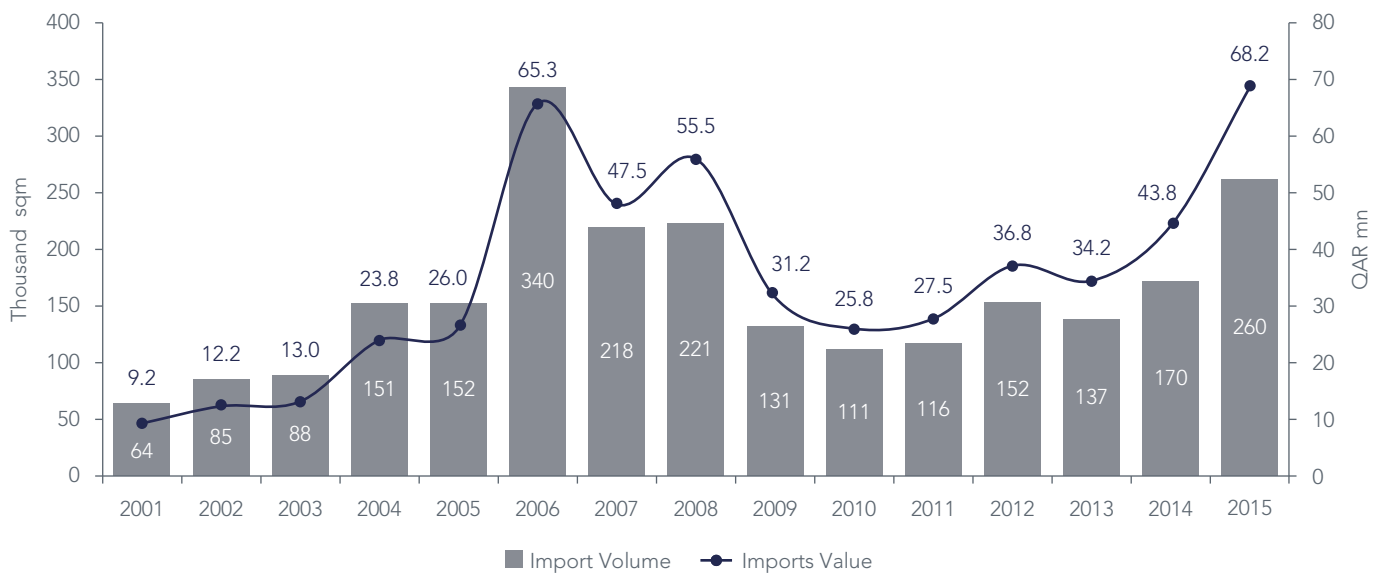
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Competed Building Statistics

6.1.2.2. Trade Analysis

6.1.2.2.1. Historical Trade Analysis

Imports have followed the market size and real estate development trends. Primary Interviews with aluminum and glass fabricators indicate that in 2015, 25% of the market, in value terms, was serviced by imports. Key sources of imports are the UAE, the KSA and other GCC region countries.

Chart 136. Qatar's Aluminum Sheet Cladding Works Imports, 2001 to 2015

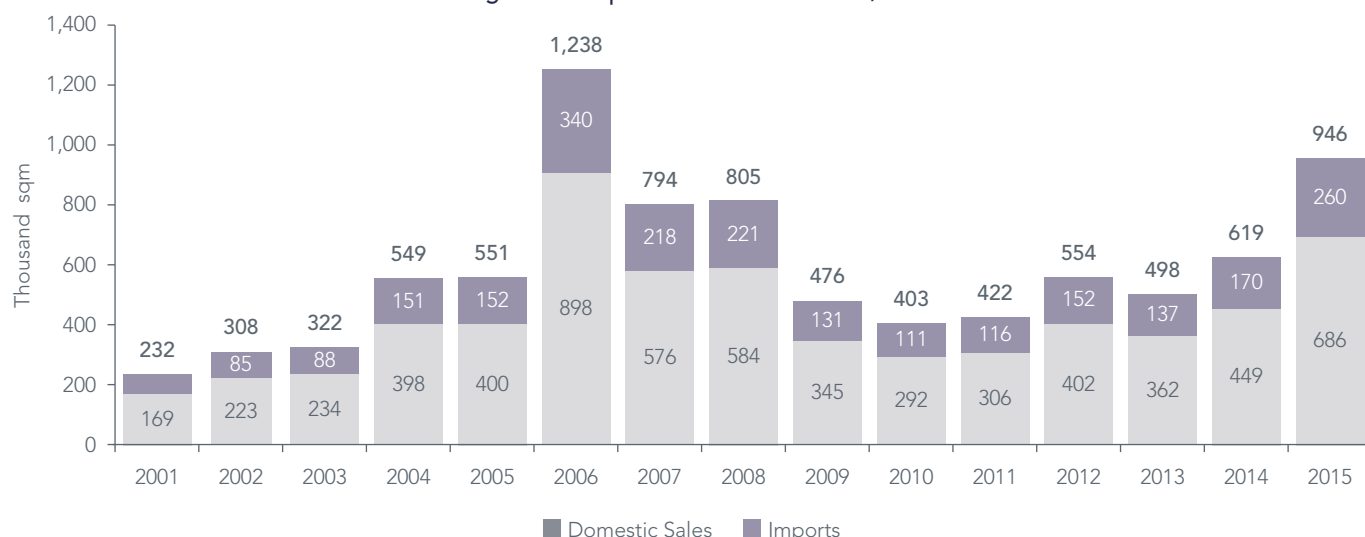


Source: ITC Trademap, Team Analysis

6.1.2.2.2. Share of Imports in Domestic Consumption

Imports account for 27.5% of the Qatar market in quantity terms as it is about 12% cheaper than domestic production.

Chart 137. Qatar's Aluminum Sheet Cladding Works Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

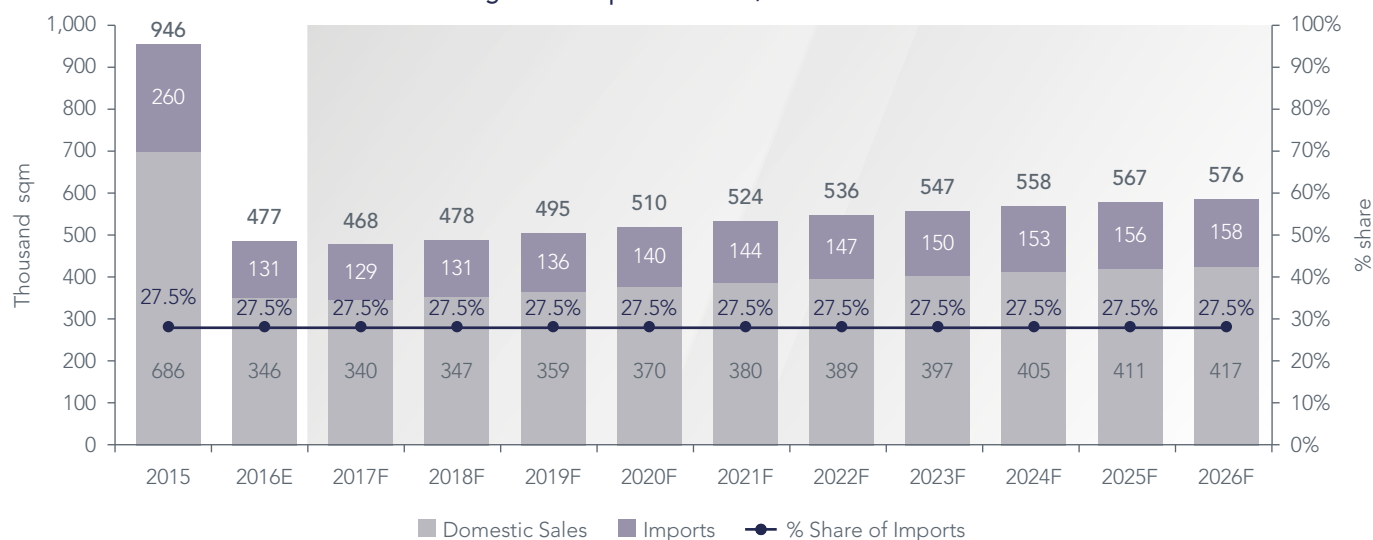
6.1.2.2.3. Assessment of Export Opportunities

Qatar produces aluminum composite panels, which is a major raw material consumed in aluminum sheet cladding works. However, aluminum and glass fabricators import aluminum composite panels from the UAE and the KSA, which is cheaper than domestic production. Due to high cost of production in Qatar as compared to other GCC region countries, export opportunity for aluminum sheet cladding works is unlikely.

6.1.2.2.4. Trade Forecast

The import forecast of aluminum sheet cladding works indicates that about 27.5% of the market requirements (in quantity terms) will be met by imports. Primary interviews aluminum fabricators indicate that imports are about 12% cheaper than domestic production. Imports are likely to range from 131,013sqm in 2016 to 158,128qm in 2026

Chart 138. Qatar's Aluminum Sheet Cladding Works Import Forecast, 2015 to 2026



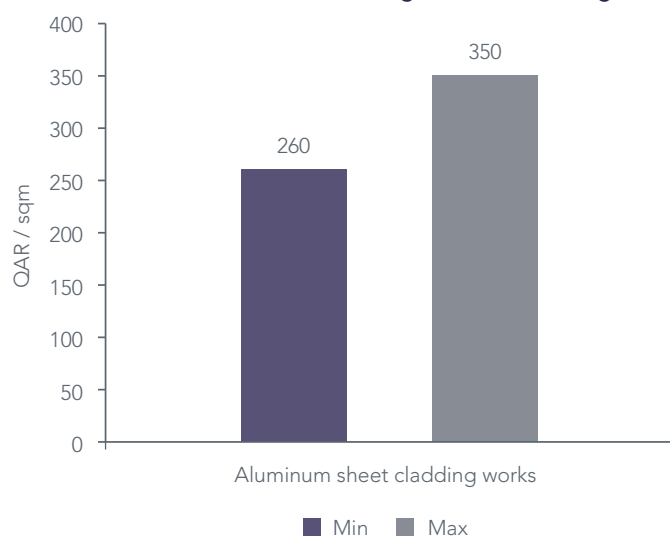
Source: Team Analysis, ITC Trademap

6.1.2.3. Pricing Analysis

The selling prices of aluminum sheet cladding works are quoted on the basis of per sqm and vary as per the product type, size, design, detailing, color and other specifications. The price ranges from QAR260 to 350 per sqm.

On average, imports are 12% cheaper than domestic production. Considering the inflation rates in Qatar, the average prices are expected to reach QAR391 per sqm for domestic production and QAR344 per sqm for imports in 2026.

Chart 139. Aluminum Sheet Cladding Works Price Range



Source: Team Analysis, Primary Interviews

Chart 140. Qatar's Aluminum Sheet Cladding Works Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

6.1.3. Aluminum Doors, Windows and Partitions

This segment includes doors, windows and wall partitions made from solid aluminum with minimal or no glass panels fitted in between. These products are used in all types of real estate asset classes, such as villas, multi-story residential buildings, commercial buildings and public buildings. These are made from aluminum profiles and sections and are usually painted in desired color.

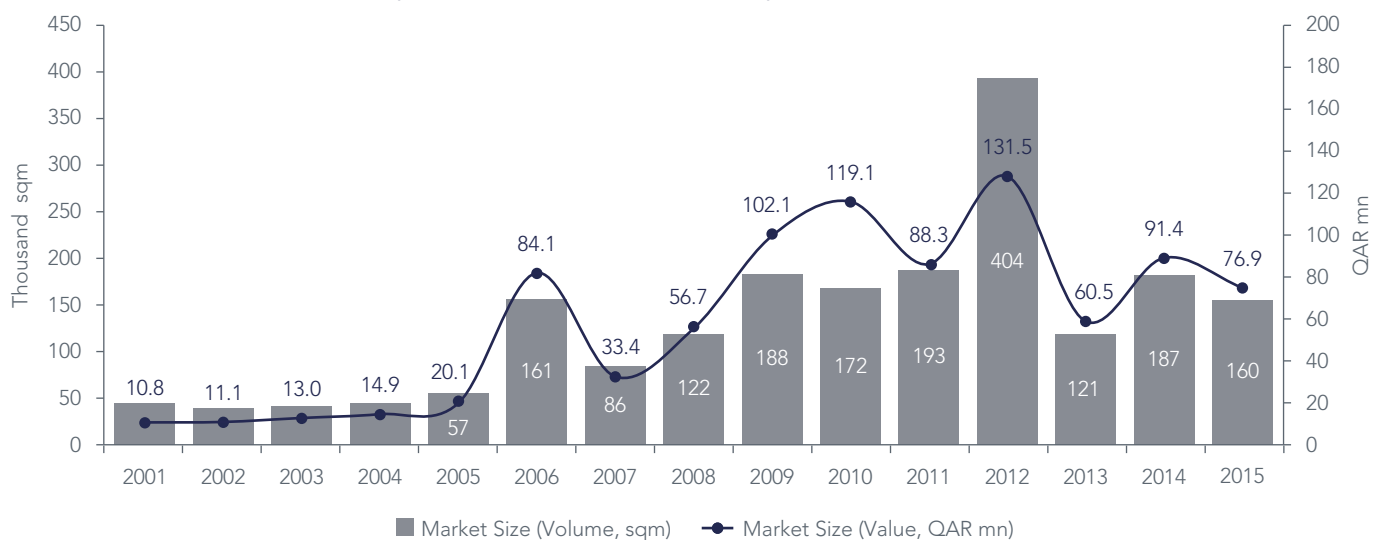


6.1.3.1. Demand-Side Analysis

6.1.3.1.1. Historical and Current Market Size

The market size for aluminum doors, windows and partitions has followed the development trends of commercial projects and multi-story residential developments. The market size grew from 45,775sqm (QAR10.8mn) in 2001 to 160,763sqm (QAR84.1mn) in 2006, at a CAGR of 28.6%.

Chart 141. Qatar's Aluminum Doors, Windows and Partitions Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

However, the market size reduced in 2007 and recovered to reach 188,423sqm in 2009. Thereafter, with the exception of 2012 and 2013, the market had been relatively flat in quantity terms and reached 159,715sqm (QAR76.9sqm) in 2015.

6.1.3.1.2. Demand Drivers

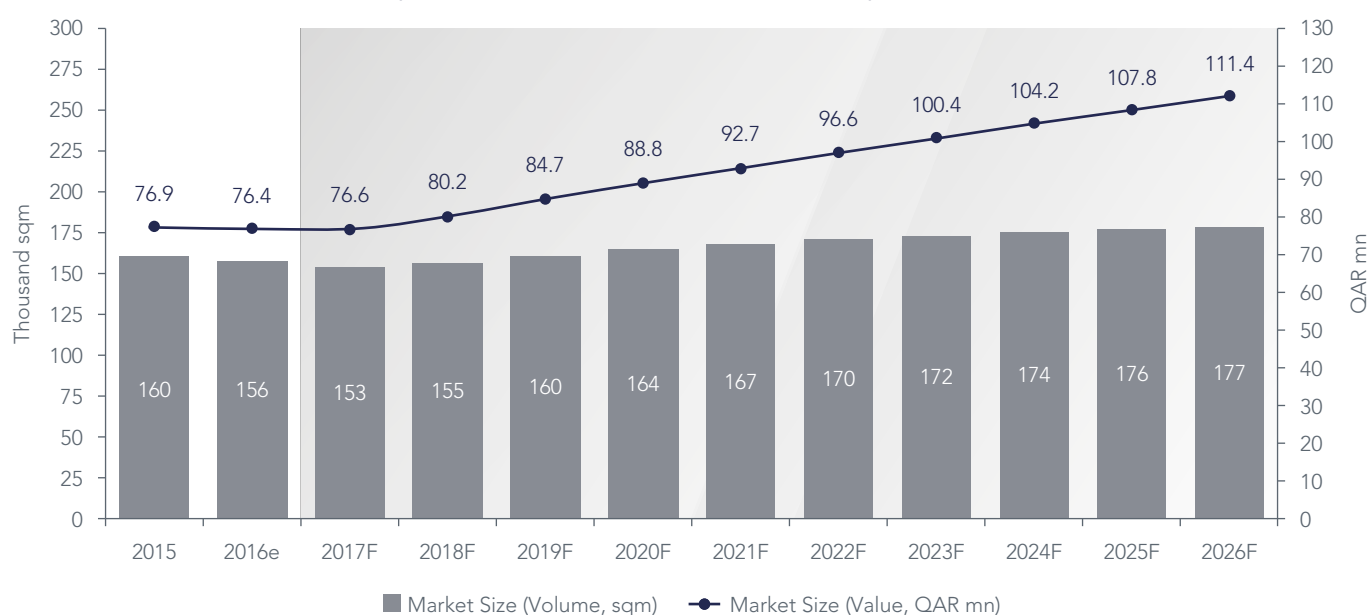
Demand for aluminum doors, windows and partitions is driven by requirements arising from real estate development projects that include various types of asset classes, such as villas, multi-story residential buildings, commercial developments, public buildings and industrial facilities. Civil contractors undertaking construction contracts comprise the customer segment. Architects and interior designers who design doors, windows and partitions are the key influencers.

6.1.3.1.3. Demand Forecast

The aluminum doors, windows and partitions market is expected to grow from 159,715sqm in 2015 to an estimated 177,385sqm in 2026, registering a CAGR of 0.96%. In value terms, the market would grow at a CAGR of 3.4% from QAR76.9mn in 2015 to reach QAR111.4mn in 2026. In the near term, the fall in oil prices in 2014 and 2015 is likely to affect the pace of construction activities across the country; hence, the market size is expected to reduce from 159,715sqm in 2016 to 152,715sqm in 2017.



Chart 142. Qatar's Aluminum Doors, Windows and Partitions Demand Forecast, 2015 to 2026



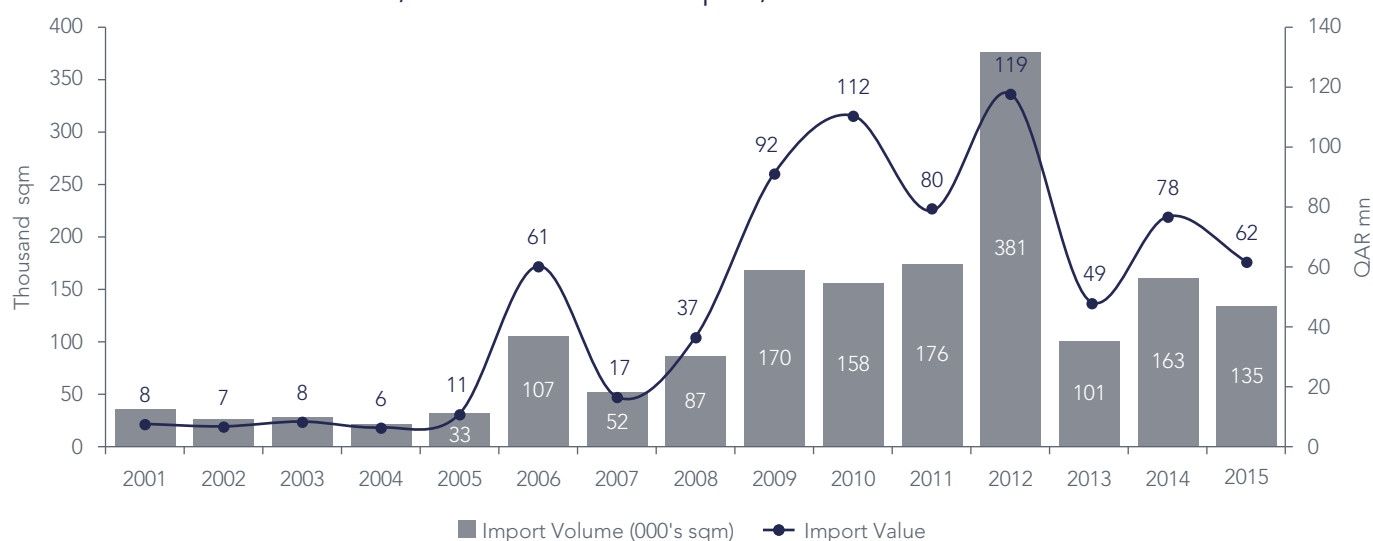
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

6.1.3.2. Trade Analysis

6.1.3.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 35,857sqm in 2001 to 106,689sqm (QAR61mn) in 2006. Thenceforth, imports paced up to 169,780sqm (QAR92mn) in 2009, and peaked in 2012 to 380,643sqm (QAR119mn), when due to slowdown, inexpensive imports were preferred over domestic production. Further, imports fell steeply in 2013, but gradually picked up growth in the subsequent years to reach 134,970sqm (QAR62mn) in 2015.

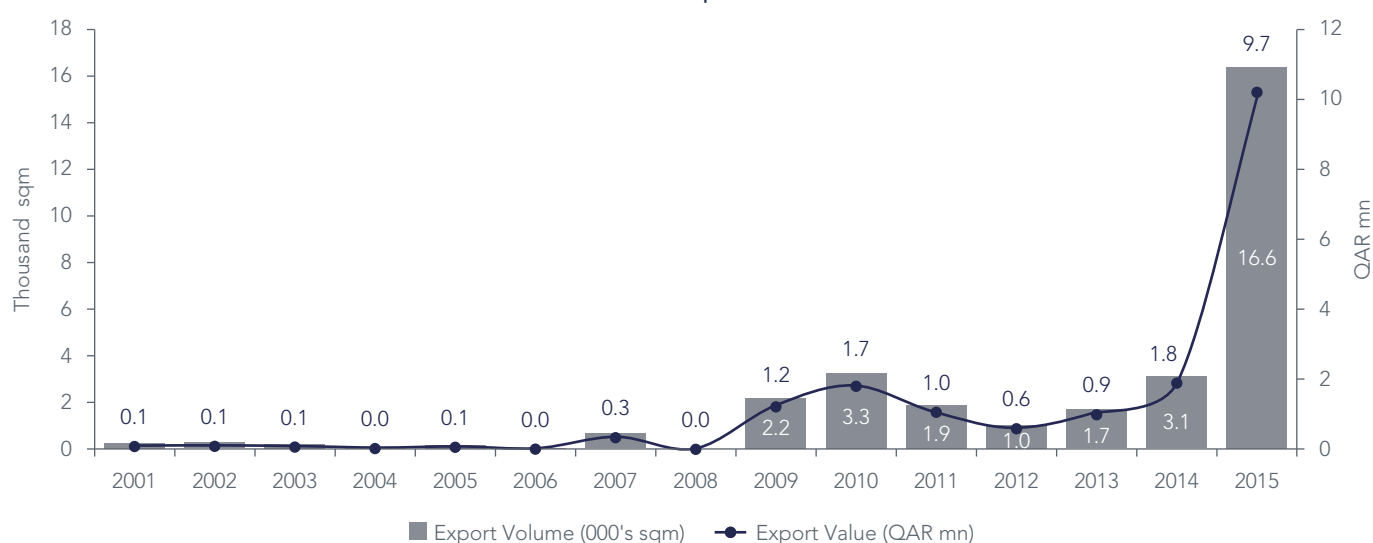
Chart 143. Qatar's Aluminum Doors, Windows and Partitions Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: The analysis of historical export data indicates that exports have been very irregular and very small as compared to the domestic production. During 2001 and 2015, annual exports averaged at 223sqm. In 2015, exports peaked at 16,605sqm on account of the exports of wall partitions to Kuwait.

Chart 144. Qatar's Aluminum Doors, Windows and Partitions Exports, 2001 to 2015

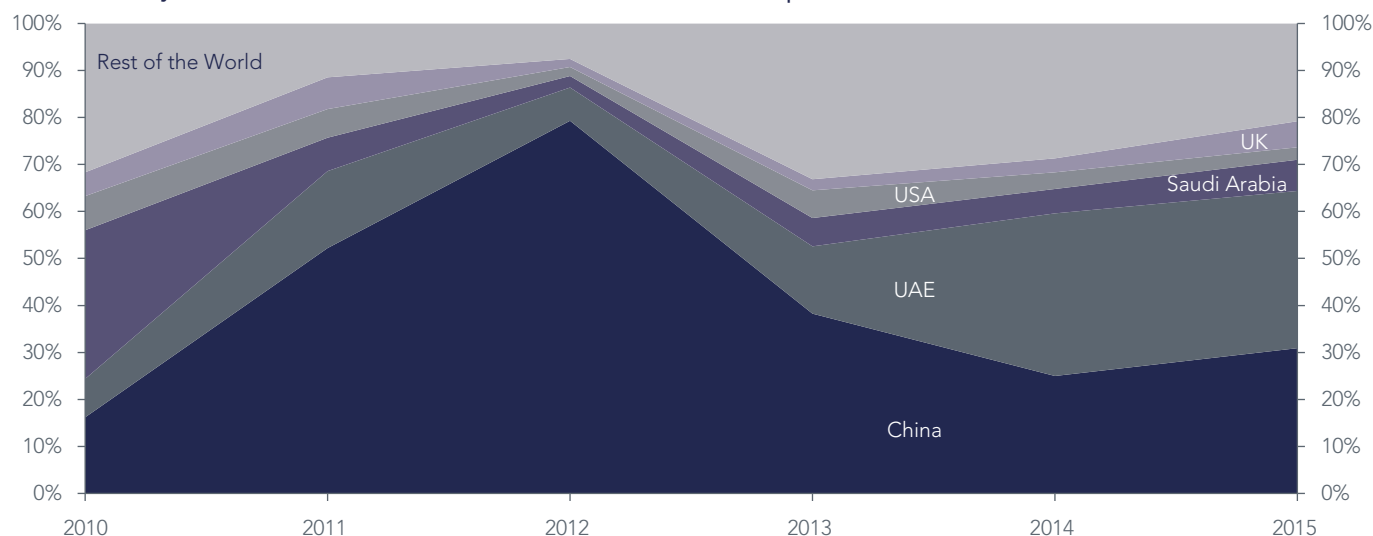


Source: ITC Trademap, Team Analysis

6.1.3.2.2. Trade by Source and Destination

Imports: The analysis of aluminum doors, windows and partitions imports amounting to 122,756sqm from 2010 to 2015 indicates that China (48%), the UAE (17%), the KSA (9%), the US (4%) and the UK (4%) are the major sources of imports.

Chart 145. Key Sources of Aluminum Doors, Windows and Partitions Imports, 2010 to 2015

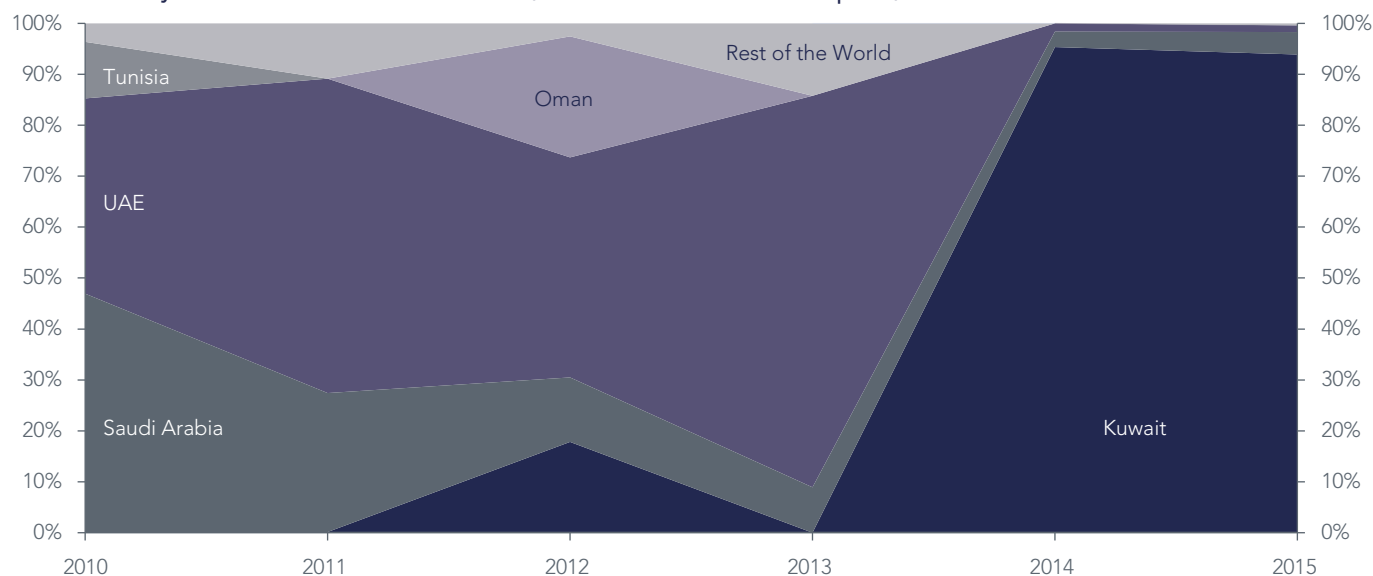


Source: ITC Trademap, Team Analysis

Trends in imports during 2010 to 2015 indicate that the share of China peaked in 2012 at 79.3% and steadily declined to 30.9% in 2015. During this period, the share of the UAE in imports into Qatar increased from 7.1% in 2012 to 33.5% in 2015 to emerge as the leading exporter to Qatar. During 2010 to 2015, Saudi Arabia, the US and the UK had small share of imports.

Exports: The analysis of aluminum doors, windows and partitions exports amounting to a total of 27,633sqm from 2010 to 2015 indicates that Kuwait (84%), the KSA (7%), the UAE (7%), Tunisia (1%) and Oman (0.3%) are the major sources of exports.

Chart 146. Key Destinations of Aluminum Doors, Windows and Partitions Exports, 2010 to 2015



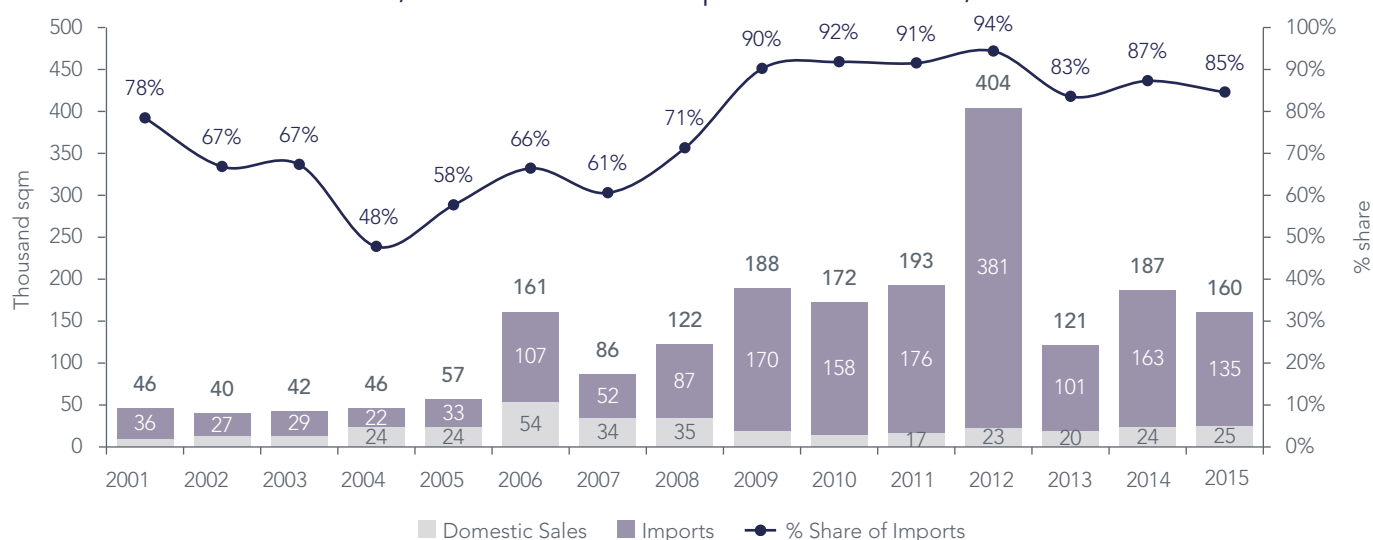
Source: ITC Trademap, Team Analysis

The small quantity of exports of aluminum doors, windows and partitions from Qatar has been to nearby countries, such as Kuwait and the UAE, which have emerged as the leading destination for exports. During 2010 to 2015, the share of the UAE decreased from 61.7% in 2011 to 1.3% in 2015 and that of Kuwait increased from 17.8% in 2012 to 93.9% in 2015.

6.1.3.2.3. Share of Imports in Domestic Consumption

Imports: The share of imports in Qatar's aluminum doors, windows and partitions market declined from 78% in 2001 to 48% in 2004. However, the share of imports as a percentage of domestic consumption witnessed a gradual year-on-year increase. After the global economic slowdown of 2008 and 2009, the share of imports further grew to reach 90% to 94% during 2009 and 2012, due to a preference for inexpensive imports. As the economy recovered, the share of imports reduced marginally in 2012 and 2014 and reached 85% in 2015.

Chart 147. Qatar's Aluminum Doors, Windows and Partitions Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

6.1.3.2.4. Assessment of Export Opportunities

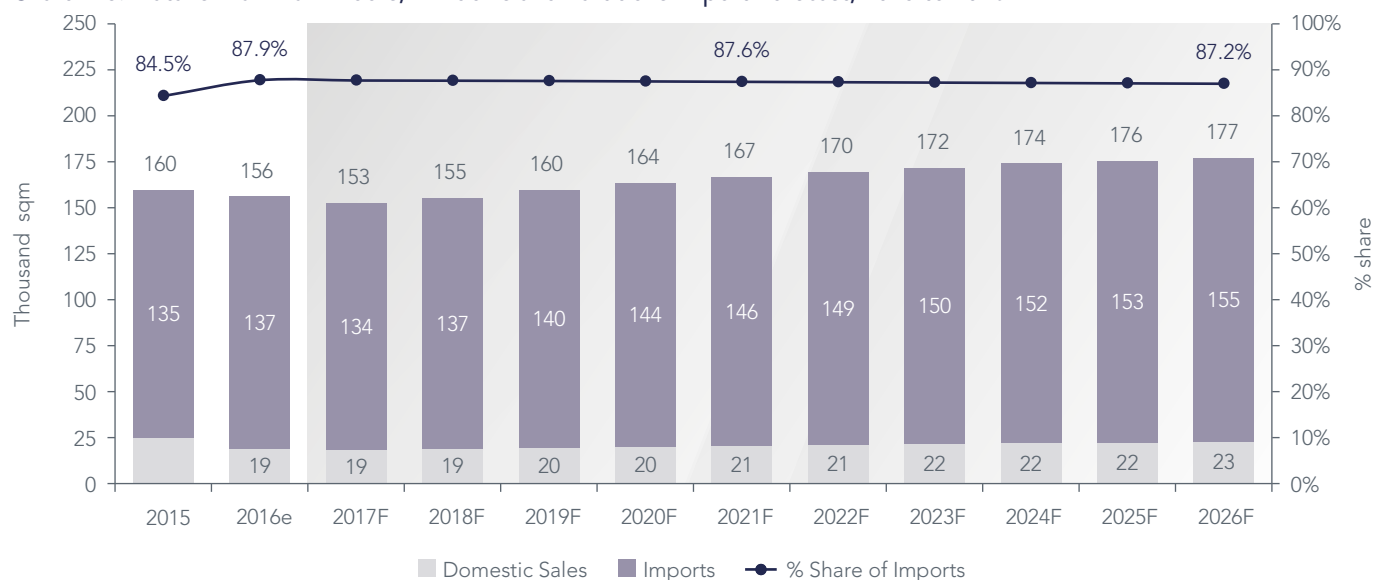
Qatar produces aluminum profiles and sections that are the major raw materials consumed in aluminum doors, windows and partitions. However, the overall cost of production in Qatar is high as compared to other GCC countries. Therefore, export opportunity for aluminum doors, windows and partitions is low. Analysis of export data indicates that across the 2001 and 2015 period, exports constituted only about 9.5% of the domestic production.

6.1.3.2.5. Trade Forecast

Imports: As the percentage of the share of imports has increased over the years, considering the near-term trends, the import forecast for aluminum doors, windows and partitions indicates that about 88% of the market requirements (in quantity terms) will be met by imports. Primary interviews with fabricators indicate that imports are 20% to 25% cheaper than domestic production. Imports are likely to range from 137,480sqm in 2016 to 154,621sqm in 2026.



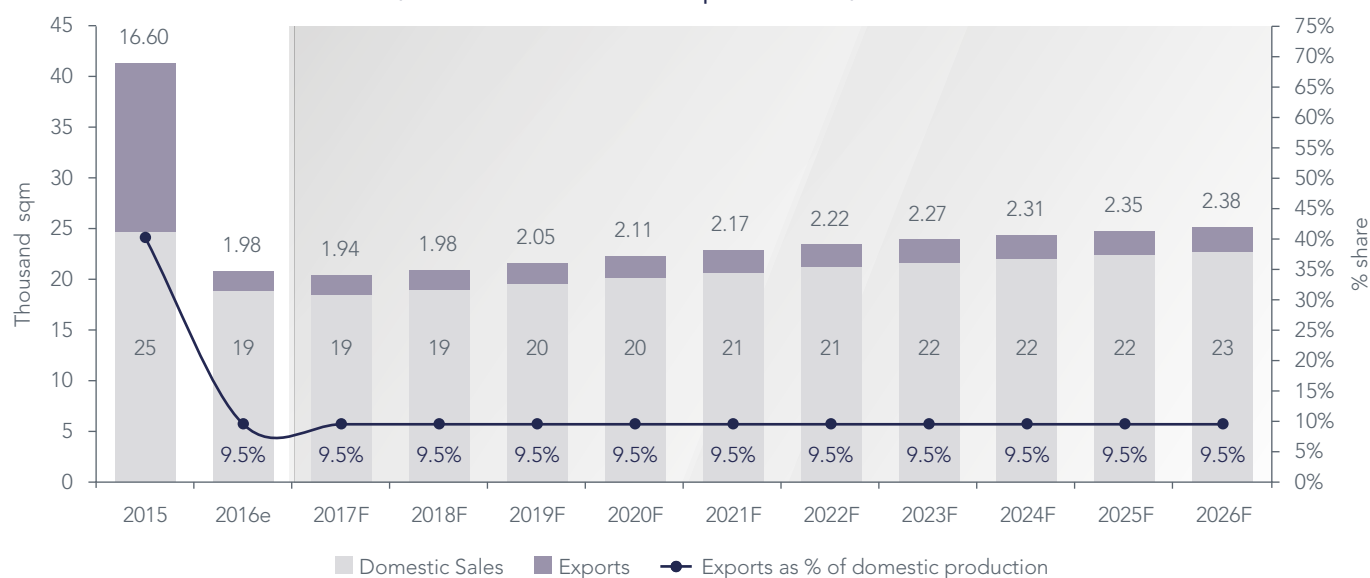
Chart 148. Qatar's Aluminum Doors, Windows and Partitions Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast indicates that exports have a small opportunity as about 9.5% of the domestic production may be exported. Exports are likely to range from 1,975sqm in 2016 to 2,384qm in 2026.

Chart 149. Qatar's Aluminum Doors, Windows and Partitions Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

6.1.3.3. Pricing Analysis

Selling prices for aluminum doors, windows and partitions are quoted on per sqm basis and vary as per the size, design, color and other specifications. Currently, the 2016 domestic prices for aluminum doors, windows and partitions are in the range of QAR450 and QAR750 per sqm (average of QAR600 per sqm). On an average, imports are 20% to 25% cheaper than domestic production. Considering the inflation rates in Qatar, average prices are expected to reach QAR770 per sqm in 2026 for domestic production and QAR607 per sqm for imports.

Chart 150. Qatar's Aluminum Doors, Windows and Partitions Selling Prices Forecast, 2015 to 2026



Source: Team Analysis, Primary Interviews

6.1.4. Aluminum Railing and Fencing

Aluminum staircase railings are similar to steel railings and are installed along staircases to offer support to people as they climb up and down. These are made from aluminum sections or profiles and can be combined with other materials, such as glass and stainless steel. Some staircase railings have intricate design patterns that are usually painted in golden color and made from cast aluminum.

Aluminum fencing is used along the boundary walls of real estate developments and along road medians and edges of footpaths. It is made from the sections or profiles of aluminum and is fixed to the wall or to the ground.

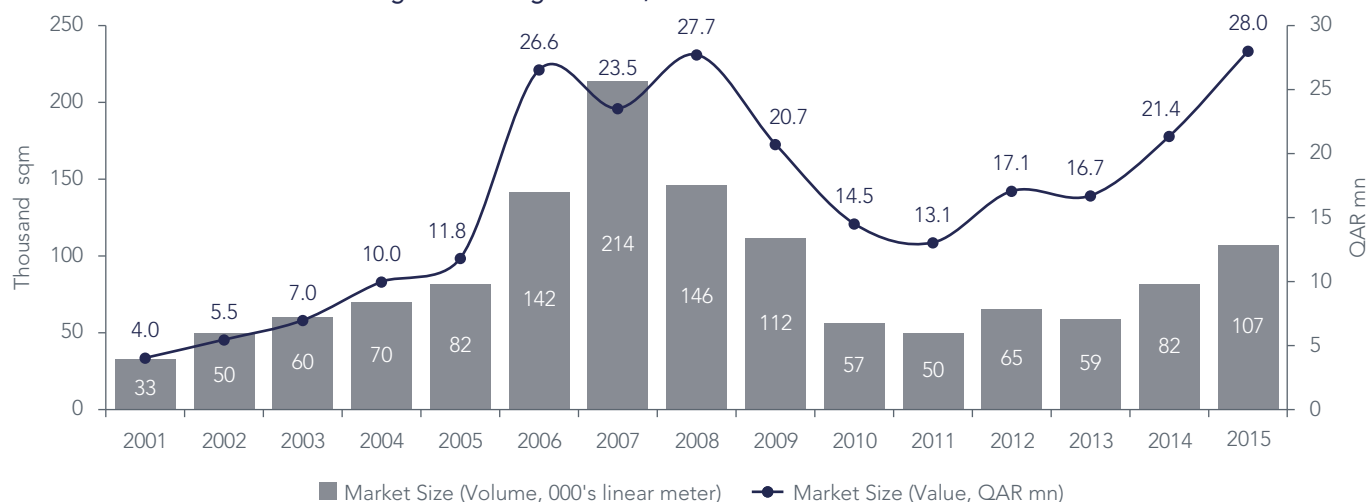
6.1.4.1. Demand-Side Analysis

6.1.4.1.1. Historical and Current Market Size

The market size for aluminum staircase railings and fencing has followed the real estate development trends as this product can be used in all types of projects.



Chart 151. Qatar's Aluminum Railing and Fencing Demand, 2001 to 2015



Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

The market size grew from 32,812 linear meter (QAR4mn) in 2001 to a peak of 213,763 linear meter (QAR23.5mn) in 2007, at a CAGR of 37%. The slowdown of 2008–2009 led to subdued real estate development activity in the subsequent years that reduced the market size to 49,701 linear meter (QAR13.1mn) in 2011. Then, the market recovered and is estimated to have reached 106,853 linear meter (QAR28mn) in 2015.

6.1.4.1.2. Demand Drivers

Demand for aluminum staircase railings and fencing is driven by requirements arising from real estate development projects that include various types of asset classes, such as villas, multi-story residential buildings, commercial developments, public buildings and industrial facilities. Civil contractors undertaking construction contracts comprise the customer segment.

Architects and interior designers who design staircase railings and fencing are the key influencers.

6.1.4.1.3. Demand Forecast

The decline in oil prices in 2014 and 2015 is likely to affect the development of new real estate projects that are either planned or underway. The market size is estimated to have reduced by 39.8% from 106,853 linear meter in 2015 to 64,369 linear meter in 2016.

The aluminum staircase railings and fencing market is expected to grow from 64,369 linear meter in 2016 to an estimated 75,745 linear meter in 2026, registering a CAGR of 1.6%. In value terms, the market would grow at a CAGR of 4.3% from QAR16.1mn in 2016 to reach QAR24.5mn in 2026.

Chart 152. Qatar's Aluminum Railing and Fencing Demand Forecast, 2015 to 2026



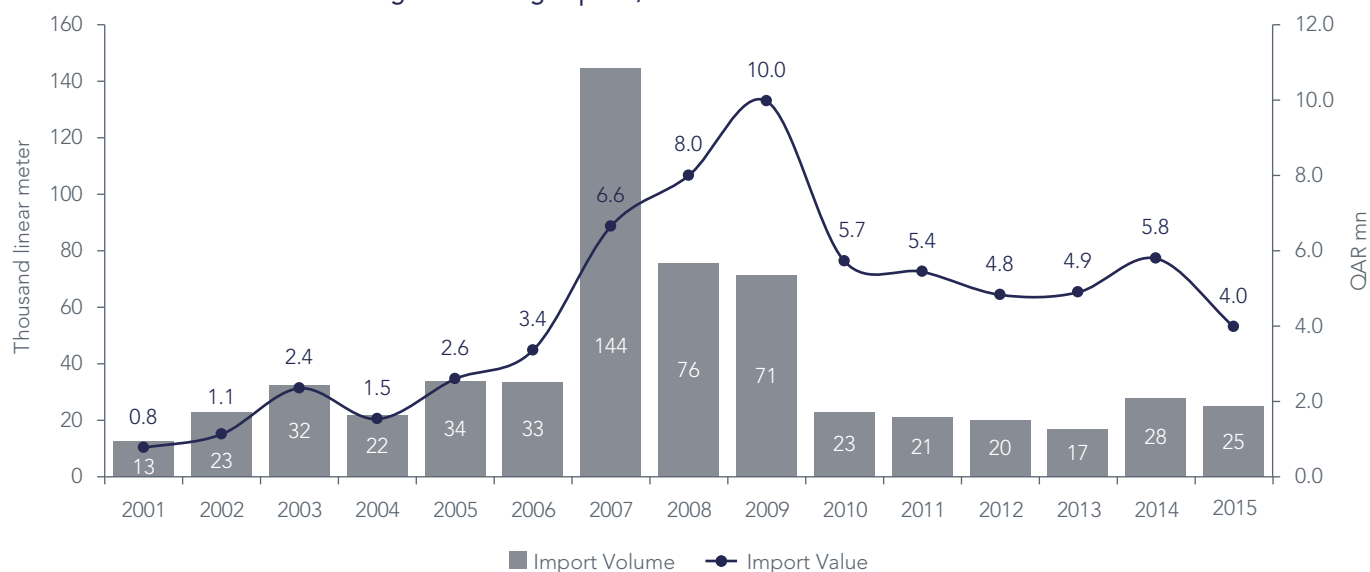
Source: Team Analysis, ITC Trademap, MDPS Annual Bulletin of Building Permits and Completed Building Statistics

6.1.4.2. Trade Analysis

6.1.4.2.1. Historical Trade Analysis

Imports: The analysis of historical import data from 2001 indicates that imports have grown as per the real estate development trends in Qatar. Imports increased from 12,501 linear meter in 2001 to 75,605 linear meter (QAR8mn) in 2008. From 2010, imports reduced substantially and reached 24,812 linear meter (QAR4mn) in 2015.

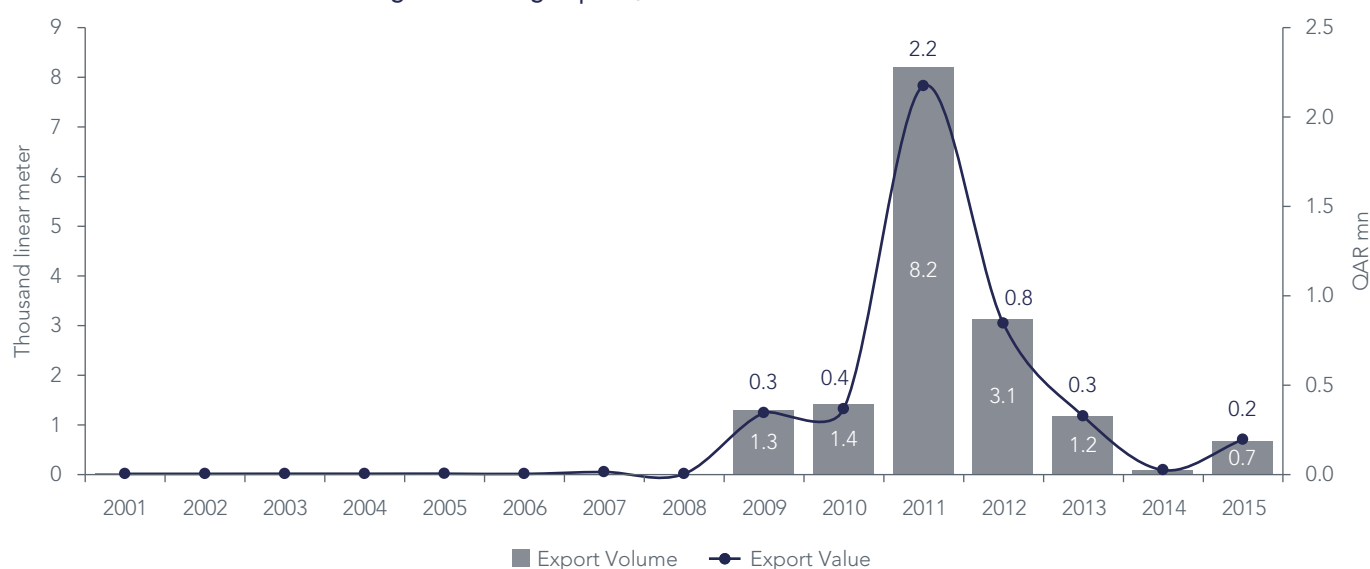
Chart 153. Qatar's Aluminum Railing and Fencing Imports, 2001 to 2015



Source: ITC Trademap, Team Analysis

Exports: Qatar's exports aluminum railing and fencing products during 2001 to 2008 were negligible. From 2009, Qatar's exports of aluminum railing and fencing had been irregular and concentrated around 2011 to 2012. Export in 2015 was valued at QAR0.19mn (678 linear meter).

Chart 154. Qatar's Aluminum Railing and Fencing Exports, 2001 to 2015

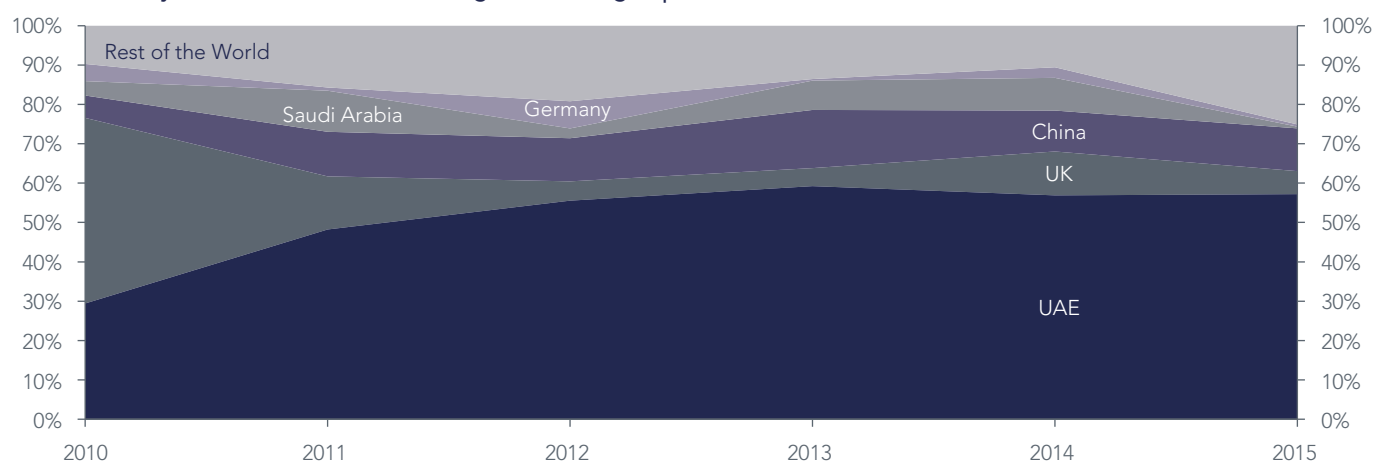


Source: ITC Trademap, Team Analysis

6.1.4.2.2. Trade by Source and Destination

Imports: The analysis of aluminum staircase railings and fencing imports amounting to 133,226 linear meters from 2010 to 2015 indicates that the UAE (51%), the UK (15%), China (10%), the KSA (5%) and Germany (3%) are the major sources of imports.

Chart 155. Key Sources of Aluminum Railing and Fencing Imports, 2010 to 2015

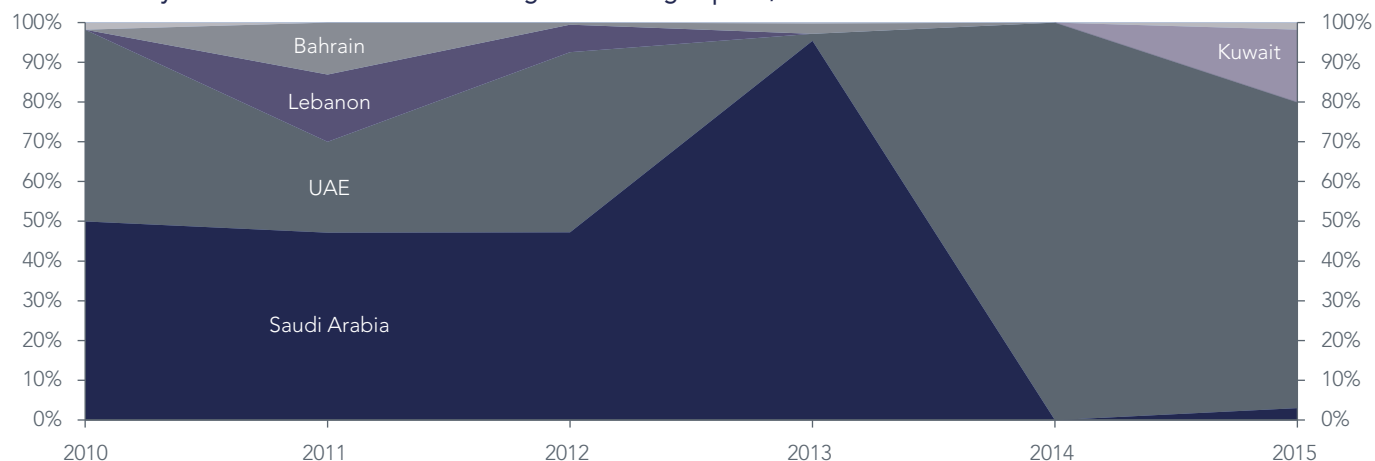


Source: ITC Trademap, Team Analysis

The UAE has been the dominant source of imports of aluminum staircase railings and fencing products into Qatar. Its share increased from 29.4% in 2010 to 57.2% in 2015. Other countries such as the UK, Saudi Arabia, China and Germany have had relatively minor shares of imports into Qatar.

Exports: The analysis of aluminum staircase railings and fencing exports amounting to 14,614 linear meters from 2010 to 2015 indicates that the KSA (49%), the UAE (36%), Lebanon (8%), Bahrain (5%) and Kuwait (0.8%) are the key destinations for exports.

Chart 156. Key Destinations of Aluminum Railing and Fencing Exports, 2010 to 2015



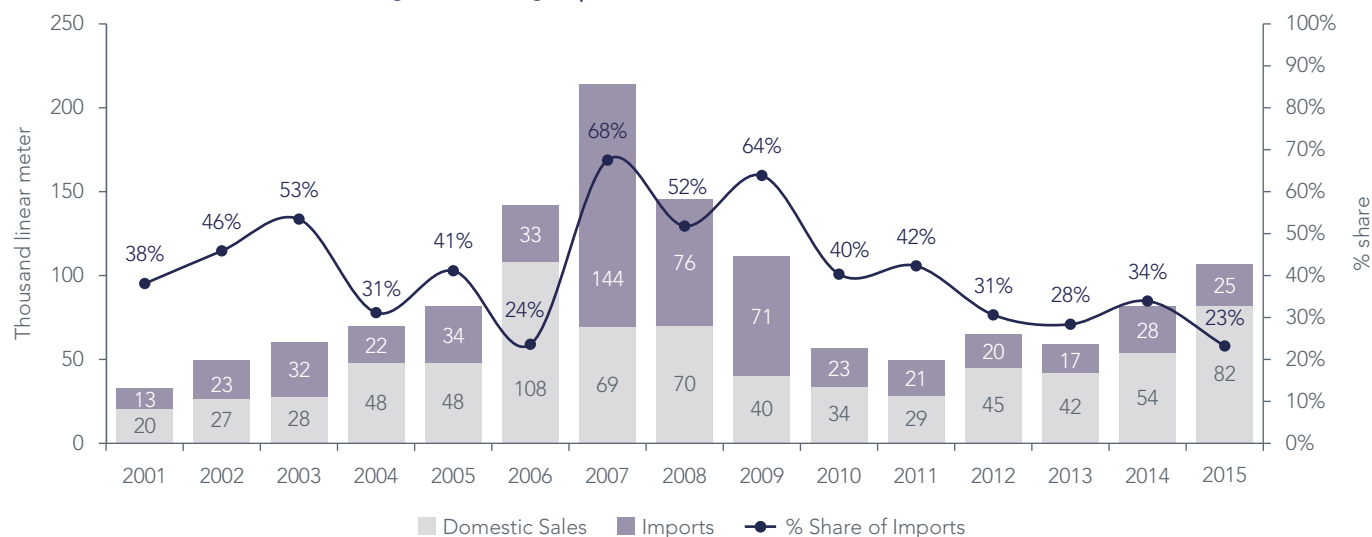
Source: ITC Trademap, Team Analysis

Exports of aluminum staircase railings and fencing have been to nearby countries, such as the UAE, Saudi Arabia, Kuwait and Bahrain. Saudi Arabia was the leading destination for exports from 2010 to 2013, while the UAE was the popular destination in 2014 and 2015.

6.1.4.2.3. Share of Imports in Domestic Consumption

Imports of aluminum staircase railings and fencing fluctuate depending on the prevailing market conditions. During the peak of construction activity between 2007 and 2009, imports accounted for an average of 61% of the market. However Qatar's dependence on imports reduced from 40% in 2010 to reach 23% in 2015.

Chart 157. Qatar's Aluminum Railing and Fencing Imports Vs Domestic Sales, 2001 to 2015



Source: Team Analysis, ITC Trademap

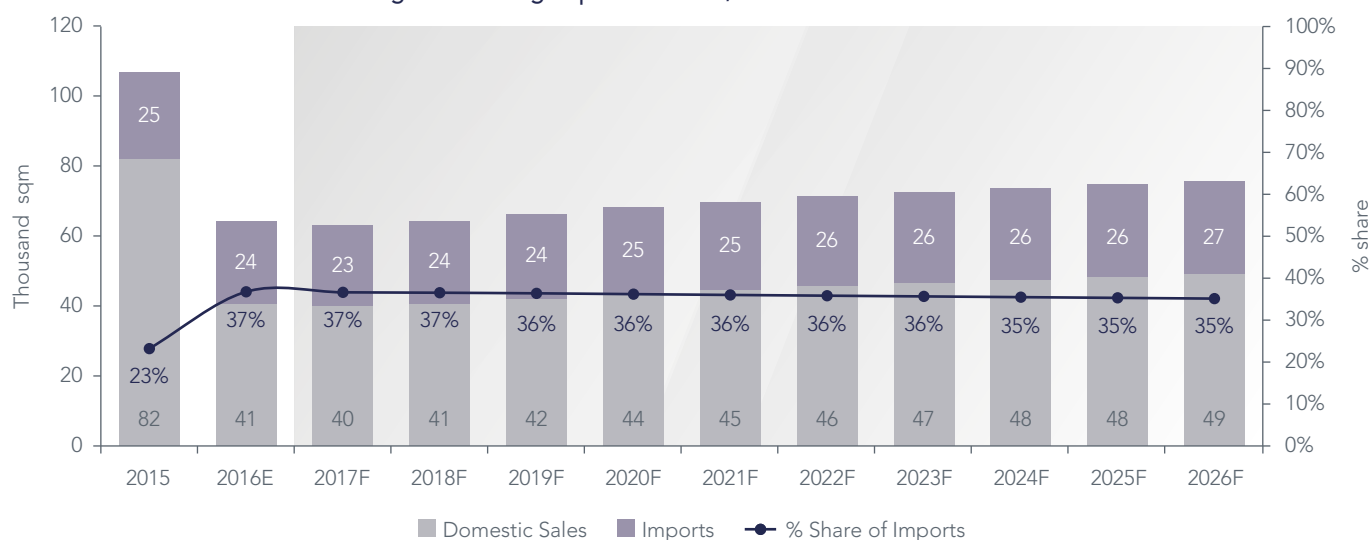
6.1.4.2.4. Assessment of Export Opportunities

Qatar produces aluminum profiles and sections that are the major raw materials consumed in aluminum staircase railings and fencing. However, the overall cost of production in Qatar is high as compared to other GCC countries. Therefore, export opportunity for aluminum staircase railings and fencing products is low. Analysis of export data indicates that across the 2001 and 2015 period, exports constituted only about 2.3% of the domestic production.

6.1.4.2.5. Trade Forecast

Imports: As the percentage of the share of imports has fallen over the years, considering the near-term trends, the import forecast for aluminum staircase railings and fencing indicates that about 36% of the market requirements (in quantity terms) will be met by imports. Primary interviews with railings and fencing fabricators indicate that imports are 30% to 35% cheaper than domestic production. Imports are likely to range from 23,663 linear meter in 2016 to 26,614 linear meter in 2026.

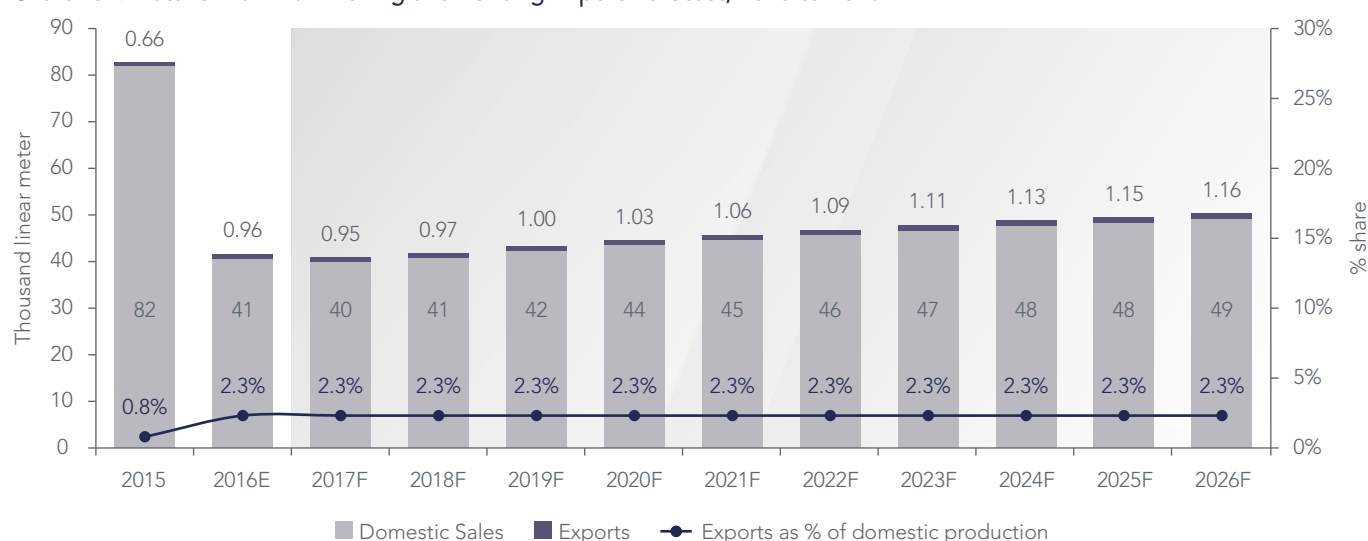
Chart 158. Qatar's Aluminum Railing and Fencing Import Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

Exports: The export forecast indicates that exports may have a minor opportunity as about 2.3% of the domestic production is likely to be exported. Exports are most likely to be limited to rare opportunities, e.g., Qatari civil contractors winning international projects and planning to source from Qatar-based fabricators. Exports are likely to range from 965 linear meter in 2016 to 1,165 linear meter in 2026.

Chart 159. Qatar's Aluminum Railing and Fencing Export Forecast, 2015 to 2026



Source: Team Analysis, ITC Trademap

6.1.4.3. Pricing Analysis

The selling prices of aluminum staircase railings and fencing are quoted on per linear meter basis and vary as per the design, size, paint color, type of infills (glass, stainless steel) and other specifications. Currently, the 2016 domestic prices are in the range of QAR250 and QAR 450 per linear meter (average of QAR300 per linear meter). On an average, imports are 30% to 35% cheaper than domestic production. Considering the inflation rates in Qatar, the average prices are expected to reach QAR385 per linear meter in 2026 for domestic production and QAR211 per linear meter for imports.

Chart 160. Qatar's Aluminum Railing and Fencing Selling Prices Forecast, 2015 to 2026



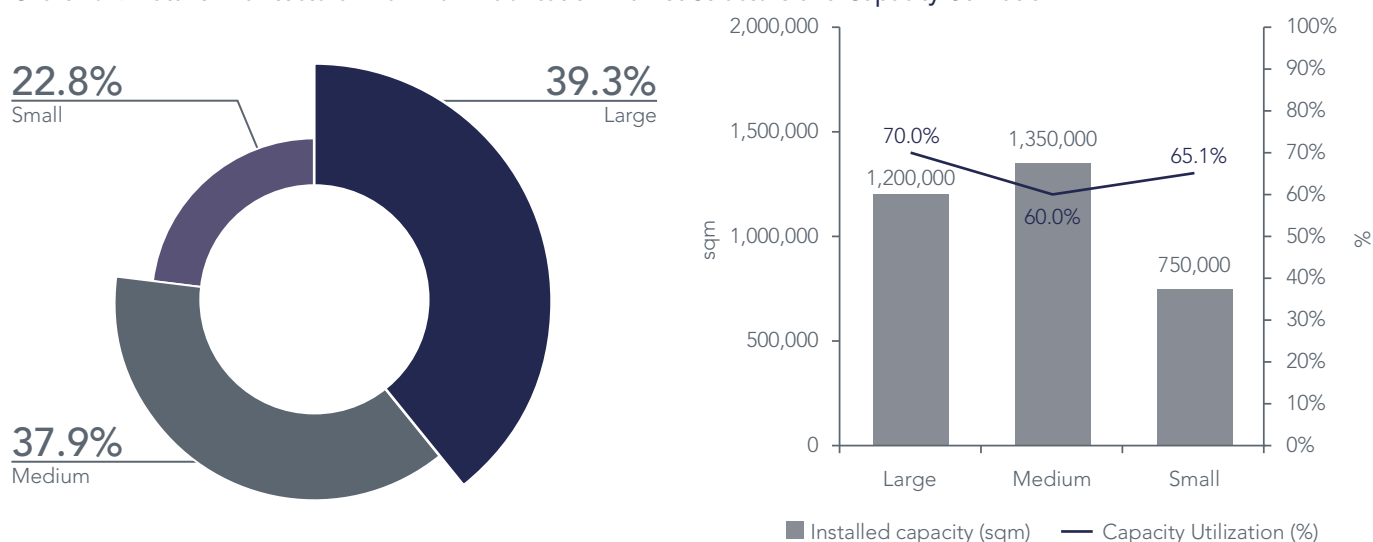
Source: Team Analysis, Primary Interviews

6.1.5. Supply-Side Analysis

6.1.5.1.1. Market Structure

The structure of Qatar's architectural aluminum fabrication market that comprises about 70 firms is fragmented with the large-sized players constituting about 39.3% share of the market. Based on the capacities of the firms, they can be classified as large, medium and small. Most large- and medium-sized architectural aluminum fabrication firms have capabilities to undertake fabrication of all types of architectural aluminum products, such as aluminum and glass works, sheet cladding, doors, windows and partitions, staircase railings and fencing, while small firms are restricted to less-intensive fabrication works and assembly of imported aluminum and glass works.

Chart 161. Qatar's Architectural Aluminum Fabrication Market Structure and Capacity Utilization



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015

Small-sized Firms



Based on insights from primary interviews, these firms have an installed capacity of not more than 15,000sqm per annum. These units have less than 10 employees and their capacity utilization is 65.1%. Small companies mainly focus on doors and windows, railings and fencing, and assembly of imported aluminum and glass works. Qatar has 50 such firms that collectively account for 23% share of the market.

Medium-sized Firms



Qatar's top-5 architectural aluminum fabrication firms form the group of large-sized firms. They collectively constitute 39.3% share of the market in terms of quantity. Furthermore, in terms of products and services, the leading players have capabilities to manufacture all types of aluminum and glass works, sheet cladding, doors, windows and partitions, staircase railings and fencing. Average capacity utilization of large firms is 70%.

Large-sized Firms



There are 15 medium-sized firms, each having an average installed capacity of over 15,000sqm per annum and less than 240,000sqm per annum. The medium-sized firms collectively have 37.9% share of the market in volume terms and their average capacity utilization is 60%.

Table 17. Architectural Aluminum Fabrication Market Structure Snapshot

Architectural Aluminum Fabrication	Units	Large	Medium	Small	Total
Number of players	Number	5	15	50	70
Capacity	sqm/month	20,000	7,500	1,250	
Capacity per category		1,200,000	1,350,000	750,000	3,300,000
Avg. Capacity utilisation	%	70.0%	60.0%	65.1%	65%
Sales per category		840,000	810,000	488,320	2,138,320
Market share	%	39.3%	37.9%	23%	100%

6.1.5.1.2. Profiling of Key Domestic Players

Table 18. Architectural Aluminum Fabrication: Key Domestic Players

Company	Year of establishment	Products	Installed capacity (sqm/pa)
AluTech	1995	<ul style="list-style-type: none"> • Curtain walls • Structural glazing • Cladding • Glass doors • Auto/revolving doors • Fire-rated doors with glass 	500,000
Specialized Aluminum and Steel Company (SASCO)	1983	<ul style="list-style-type: none"> • Doors and windows • Partitions and curtain walls • Structural glazing • Cladding • Skylights and domes 	400,000
Technical Glass And Aluminium Company	1989	<ul style="list-style-type: none"> • Curtain walls • Doors and windows • Glazed screens, • Shop fronts • Canopies • Skylights • Sunshades • Balustrades • Hand railings • Fencing 	300,000
Jafco Aluminum and Steel Co	2004	<ul style="list-style-type: none"> • Curtain walls • Cladding • Doors and windows • Skylights and domes • Partitions • Handrails 	250,000
Alu Nasa Company	1992	<ul style="list-style-type: none"> • Doors and windows • Cladding • Curtain walls • Skylights • Rolling shutters • Grills • Auto/revolving doors • Handrails 	250,000

Company	Year of establishment	Products	Installed capacity (sqm/pa)
Khalory Aluminium Factory	1976	<ul style="list-style-type: none"> • Doors and windows • Kitchen cabinets • Big store cabinets • Carpentry 	60,000
Khalid Aluminium Co.	1965	<ul style="list-style-type: none"> • Skylights • Cladding • Partitions • Doors and windows • Kitchen cabinets 	60,000
Union For Steel And Aluminium	1977	<ul style="list-style-type: none"> • Curtain walls • Doors and windows • Kitchen cabinets • Cladding • Partitions 	60,000
Al Shaheen Aluminium Factory	2005	<ul style="list-style-type: none"> • Doors and windows • Joinery • Kitchens • Domes • Internal partitions 	20,000
Ismail Bin Ali Aluminium	1982	<ul style="list-style-type: none"> • Curtain walls • Cladding • Composite panels • Spider systems, • Glazing • Sliding and revolving doors 	20,000
Al Adala Gulf Aluminium And Carpentry	1986	<ul style="list-style-type: none"> • Doors and windows • Kitchen cabinets • Big store cabinets 	20,000

6.1.5.1.3. Business Model Analysis

The architectural aluminum fabrication market is dominated by large players that have the capacity and capability to focus on a varied mix of products, projects and customers. Large players typically target large project works that include doors, windows, partitions, curtain walls, structural glazing, sheet cladding, skylights and domes. These are high-volume projects (average order size: QAR50 to QAR100mn). Being well-established players, large-sized firms have a competitive advantage over other players in terms of financial strength, local expertise as well as access to major projects across the country.

The medium-sized players mainly target small-scale projects (average order size: QAR5mn to QAR10mn) involving doors, windows, partitions, curtain walls and sheet cladding since they do not have sufficient funds, capacity (manpower and

machinery) to handle large-scale projects. Small players focus on singular projects involving fabrication of doors and windows, cladding, rolling shutters, grills, handrails and fencing (average order size: QAR1mn to QAR5mn). Small and medium players also undertake assembly of imported architectural aluminum fabricated products, such as curtain walls, doors, windows, partitions, structural glazing and sheet cladding.

Given the low-entry barriers, widespread applications within architectural aluminum fabrication and a large market size, this has been an attractive sector for Qatari entrepreneurs. The market is currently oversupplied, with several firms operating in the market and each targeting the same project; competition to win contracts is intense.

6.1.5.1.4. Domestic Production Competitiveness

Key factors that influence the competitiveness of architectural aluminum fabrication include raw material, labor, market size and the impact of competition.

Raw Material: Qatar has local production of aluminum extrusions used in several applications; however, it does not have facilities for glass and an aluminum rolling plant for aluminum sheet. The domestic raw material production capacity for glass and aluminum sheets is underdeveloped in the country; therefore, manufacturers in Qatar depend on imports to meet their raw material needs.

Our primary research indicates that the raw material is procured from the UAE, Saudi Arabia, Belgium, China and Turkey. Expensive raw material significantly impacts the cost of domestically produced finished goods.

High Operational Expenses: Our Primary interviews indicate that the operational costs are significantly higher in Qatar due to higher labor costs and rent than in the nations exporting to Qatar — Kuwait, the UAE, Saudi Arabia, India, China, Turkey, etc. This adversely affects the price competitiveness of domestic production.

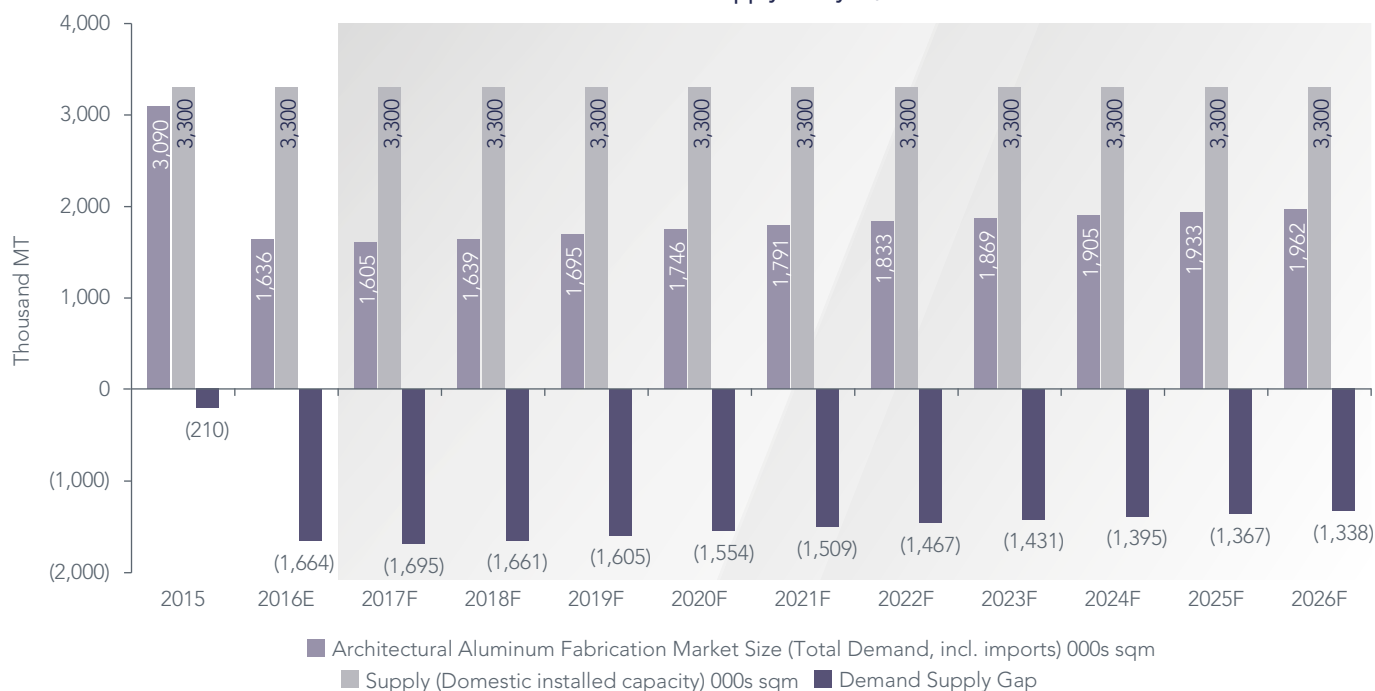
Time to Market: According to industry players, procuring raw material is time consuming, which leaves them with very little time to fabricate and deliver finished products to customers. Raw material inventory requirement increases since manufacturers either have to procure raw materials in advance that add to the inventory costs or have to purchase raw materials at current market rates, which may be higher than the quotations submitted for job works, adversely affecting their price competitiveness.

Number of Players: The architectural aluminum fabrication market is fragmented with top-5 players capturing about 39.3% of the market. Medium and small players typically target smaller scale projects than the market leaders. The market being oversupplied is characterized by fierce competition and price sensitivity.

6.1.6. Demand-Supply Analysis

Considering the 70 firms operating in the market, the installed capacity is 3,300,000sqm per annum. This does not include assumptions for new players having plans to enter the market that have not been announced so far. As per market size estimates (including imports projection), the demand-supply gap indicates an oversupply of 1,553,684sqm per annum in 2020 to 1,337,851sqm per annum in 2026.

Chart 162. Qatar's Architectural Aluminum Fabrication Demand-Supply Analysis, 2015 to 2026



Source: Team Analysis, Primary Interviews, MDPS Annual Bulletin of Industry and Energy Statistics 2015, ITC Trademap

6.1.7. Regulatory Analysis

Qatar Construction Specification 2014: As architectural aluminum fabrication products are used in the construction sector, their production, installation and usage are mainly regulated by the following sections of Qatar Construction Specifications (QCS) 2014.

- a) **QCS 2014 Section 16: Structural Works**
This section has general instructions and regulations related to materials, drawing, fabrication, welding, bolting, accuracy of fabrication, erection, accuracy of erected metal work and protected treatment.
- a) **QCS 2014 Section 17: Metal Work**
This section has general instructions and regulations related to material classification, metal doors and windows, architectural metalwork, light metal support, cladding support and workmanship.

In addition to the above, architectural aluminum fabrication units are expected to be familiar with other relevant sections of the QCS that regulate construction activities having an interface with aluminum fabrication products. These sections include section 13 (Masonry), section 14 (Roofing), section 4 (Foundation and retaining structures) and section 5 (Concrete).

Ministry of Environment: Aluminum fabrication units need to be approved by the Ministry of Environment.

Civil Defense Department (Ministry of Interior): All building material products need an approval from the Civil Defense Department (Ministry of Interior) as per Emiri Decree No. 9/2012. Aluminum fabrication units have to comply with applicable fire safety norms.

ISO Certification: Obtaining ISO certifications (Quality 9001, OHSAS 18001 and Environment 14,001) are vital for tendering purposes.

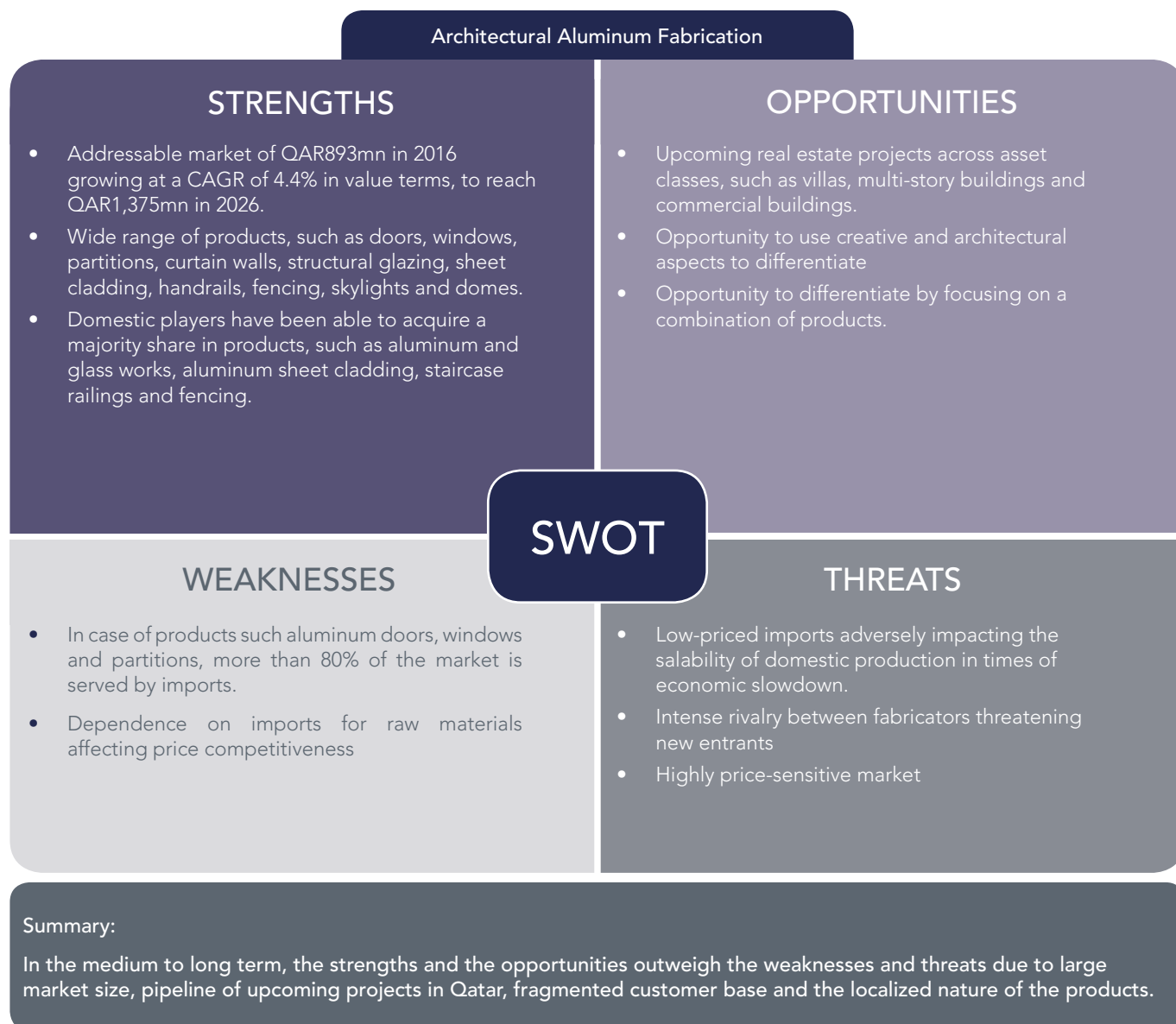
Apart from the above, all prospective entrepreneurs need to follow applicable laws on company registration and industrial license to obtain land and building permissions for setting up an aluminum fabrication facility in Qatar.



6.1.8. SWOT Analysis and Michael Porter's Five Forces analysis

6.1.8.1. SWOT Analysis

Figure 20: Architectural Aluminum Fabrication SWOT Analysis



6.1.8.2. Michael Porter's Five Forces Analysis

Figure 21: Michael Porter's Five Forces Model (Architectural Aluminum Fabrication)

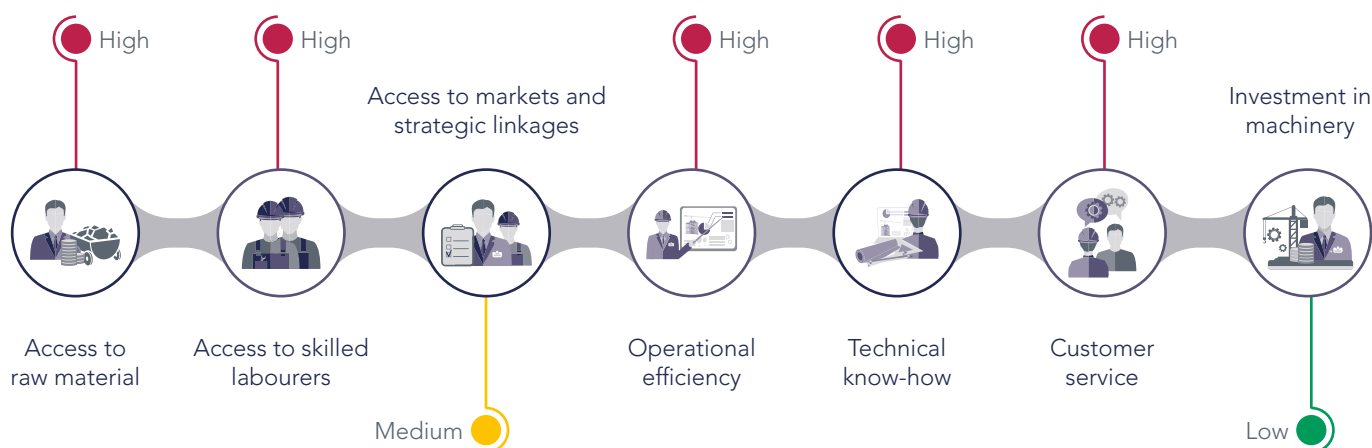


6.2. Critical Success Factors

Critical Success Factors include the following:

Figure 22: Critical Success Factors - Architectural Aluminum Fabrication





6.3. Outlook

The architectural aluminum fabrication forms a sizable portion (21.4%) of the structural metal products sector. Qatar's growing real estate sector offers opportunities for new units in the architectural aluminum fabrication market in products such as aluminum and glass works, aluminum sheet cladding, staircase railings and fencing.

The market is expected to grow at a CAGR of 4.4% from QAR893mn in 2016 to an estimated QAR1,375mn in 2026. A large market size and a moderate pace of growth offer an opportunity for new players to tap into 32,738sqm worth of average incremental opportunity every year. Subject to competitive challenges, opportunities exist for two medium-sized players (5,000sqm per month installed capacity, running at 80% utilization) dedicated to architectural aluminum fabrication works, to enter the market every three years.

In terms of challenges, the market is likely to remain significantly competitive and price sensitive. Heavy dependence on imports for procurement of raw materials and high operational expenses (salaries, rent, etc.) as compared to those in other countries such as the UAE and the KSA would limit export potential to rare opportunities. Imports are likely to remain cheaper as compared to domestic production and further heighten the challenges.

In the medium to long term, the strengths and the opportunities outweigh the weaknesses and threats due to large market size, upcoming projects pipeline in Qatar, fragmented customer base and the localized nature of the product.





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Qatar Development Bank (QDB) was founded by Emiri Decree to grow Qatar's private sector and diversify its economy. His Highness Sheikh Hamad Bin Khalifa Al Thani, the Father Amir, identified these as vital tasks in developing Qatar into a modern state. Since our establishment in 1997, we have been at the forefront of these efforts. We have worked with thousands of Qatari entrepreneurs and enterprises. We have provided investment and guidance to brand-new start-ups and well-established corporations. And we have built a reputation for identifying promising investment opportunities. Our focus is on growing small and medium enterprises in key sectors by offering a number of services through a single window to support their expected growth. Through smart, targeted financing products and advisory support services, QDB is nurturing a sound and sustainable knowledge-based economy for Qatar.

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