IMPACT OF ANTI-COMPETITIVE PRACTICES IN THE CONSTRUCTION INDUSTRY ON AFFORDABLE HOUSING IN URBAN SRI LANKA

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Impact of Anti-Competitive Practices in the Construction Industry on Affordable Housing in Urban Sri Lanka

Advocata Institute

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Abbreviations

BMC	Building Materials Corporation
BOI	Board of Investment
CAA	Consumer Affairs Authority
CAC	Consumer Affairs Council
CIDA	Construction Industry Development Authority
CMC	Colombo Municipal Council
CSE	Colombo Stock Exchange
DCS	Department of Census and Statistics of Sri Lanka
DPV	Discounted Present Value
FTC	Fair Trading Commission
GDP	Gross Domestic Product
HAI	Housing Affordability Index
HIES	Household Income and Expenditure Survey
HS Codes	Harmonized System Codes
ISFTA	Indo - Sri Lanka Free Trade Agreement
KII	Key Informant Interview
LME	London Metal Exchange
MOF	Ministry of Finance
MPS	Marginal Propensity to Save
MRP	Maximum Retail Price

MT	Metric Ton
NBT	Nation Building Tax
NHDA	National Housing Development Authority
OECD	Organization for Economic Co-operation and Development
OHCHR	Office of the High Commissioner for Human Rights
PAL	Port and Airport Levy
PAT	Profit After Tax
PSFTA	Pakistan – Sri Lanka Free Trade Agreement
PUCSL	Public Utilities Commission of Sri Lanka
REEL	Real Estate Exchange (Pvt) Ltd
SDG	Sustainable Development Goals
SEC	Securities and Exchange Commission
SLSI	Sri Lanka Standard Institute
SLS	Sri Lanka Standards
SOE	State-Owned Enterprise
STP	Sustainable Township Program
TRC	Telecommunications Regulatory Commission
UDA	Urban Development Authority
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNP	United National Party
VAT	Value Added Tax

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Executive Summary

Access to safe, secure and affordable housing is a basic human right. Housing is a major pillar of the United Nations' 2030 Agenda for Sustainable Development Goals (SDG 11). This report examines the current state of housing in Sri Lanka and the reasons for the gap between demand and supply; the specific types of anti-competitive practices in the construction industry; and the impact of these practices on the provision of affordable housing. It also makes recommendations to address market and policy failures in this sector.

Despite being a basic human right, access to adequate and affordable housing is beyond the reach of most Sri Lankan s. The 2012 Census of Population and Housing estimated a housing gap of 59,684 units at the time, and this study estimates that this number has increased to 189,858 units by 2022. The housing sector is an important driver of the economy, and adequate housing provides a key foundation for social development and improved living standards.

This study fills a gap in the literature with regard to the impact of anti-competitive practices in the construction industry on housing affordability in Sri Lanka. For this study, a multifaceted research approach is taken. Through a review of the existing literature, empirical evidence, key informant interviews, and the construction of a Housing Affordability Index (HAI),[1] the study explores the structure of key input markets in the construction industry and their impact on housing affordability. It also reviews institutions, laws, regulations and trade policies which have enabled and sustained potential anti-competitive practices in the housing construction industry.

The HAI demonstrates that to afford a 500 sq ft and 1000 sq ft house, people should be in or over the 70th and 80th higher income decides respectively. This finding clearly indicates that the majority of the people in Sri Lanka are not able afford a house, even when accounting for lifetime income. The study highlights the nexus between trade policy and anti-competitive practices in the construction industry. Trade policies have negatively affected consumers through higher prices, lack of availability of raw materials as well as by limiting choice. The study finds instances of 'tied selling' where firms that produce construction materials refuse to sell their products to retailers unless another product is purchased along with it. The study also reveals the existence of exclusive dealing, where large manufacturers prohibit retailers from supplying rival products, as well as the practice of misleading advertising by some of the biggest players in the industry. The study also finds that the Consumer Affairs Authority (CAA), the agency responsible for regulating anti-competitive practices in the sector, suffers from a lack of independence and capacity.

The findings from this study call for the gradual phasing out of trade restrictions and avoidance of ad hoc import controls thus preventing domestic manufacturers from abusing their market power. To improve competition policy, raising awareness of the responsibilities and enforcement powers of CAA both within the agency itself and the general public, and strengthening the enforcement of competition law by addressing issues of independence as well as by ensuring that the entity has adequate qualified and experienced personnel are recommended.

[1] *The HAI considers lifetime incomes and housing prices and provides the cut-off rate for those who can afford a house.*

1. Introduction

The Universal Declaration of Human Rights in 1948 and the International Covenant on Economic, Social and Cultural Rights in 1966 recognized access to housing as a fundamental human right. This right implies that the government is responsible for ensuring access to a safe, secure, habitable, and affordable home for all citizens. The right to adequate housing was an important element of the United Nations Millennium Development Goals. It also forms a key pillar in the United Nations' 2030 Agenda for Sustainable Development; Sustainable Development Goal (SDG) 11 targets access for all to adequate, safe and affordable housing and basic services (OHCHR, n.d.).

Despite these declarations and goals, the supply of affordable housing has not kept up with demand from population growth, urbanization, and migration. UN Habitat estimates that by 2030, 3 billion people or about 40% of the world's population will require access to adequate housing. This number is equivalent to providing 96,000 affordable housing units every day (UN, 2019).

The importance of the housing sector to an economy goes beyond its contribution to improving social outcomes in terms of improved living standards and better access to education and health. Access to adequate housing provides households with better economic opportunities and financial stability. Housing forms one of the most important assets for households and is also a major motivation for saving. The lack of alternative sources of savings in the economy increases the demand for housing as a store of wealth and enables households to borrow against that collateral to develop their income earning potential. Hence, policies relating to the housing sector should be looked at not only from the perspective of improving welfare but also as a means of improving the overall productivity of the economy.

The housing industry forms an important component of a country's economy. The construction industry which includes housing accounts for around 9% of Sri Lanka's GDP.[2] Ownership of dwellings accounts for around 5% of GDP. The impact of the housing sector on the financial sector is evident from the share of lending by commercial banks to the private sector for the purpose of housing construction, which was around 12% in 2021.[3]

The price and affordability of housing are determined by several demand and supply factors. Demographic trends, cost and availability of housing finance, and government policies on taxation, subsidies and property rights have a direct impact on housing demand. Housing supply is affected by factors such as the availability of land, adequate infrastructure, and the cost and availability of construction materials. Government policy and the regulatory environment can also directly affect both housing demand and supply.

This study focuses on the housing industry because the failure to generate an adequate stock of housing disproportionately affects the poor and vulnerable. In particular, it focuses on the role and efficiency of the market for construction materials and its impact on housing supply, the affordability of housing and the quality of housing. The study will explore the impact of anti-

[2] *Department of Census and Statistics*
[3] *Central Bank Annual Report 2021 (Quarterly Survey of Commercial Bank's Loans & Advances to the Private Sector)*

competitive practices in the construction industry on the housing poor in urban Sri Lanka. The study will attempt to address the following research questions in the Sri Lankan context:

1. What are the specific types of anti-competitive practices in the construction industry?
2. To what extent do these practices impact affordable housing for the poor?
3. How can we address market and policy failures in this sector through targeted policies?

The findings of this study provide useful insights and policy recommendations on the structure of markets, the conduct of market players, and impacts on housing affordability in urban Sri Lanka.

Chapter 2 of this study describes the qualitative and quantitative methodology used in the analysis as well as the limitations encountered in the research process. Chapter 3 sets out the context for the research questions investigated in this study, and reviews housing demand and supply in Sri Lanka, the history of low-cost urban housing, and the nature and scope of competition policy and law, and trade policy. Chapter 4 analyzes the structure of key input markets in the construction industry and explores anti-competitive practices in these markets. Chapter 5 evaluates the impact of anti-competitive practices on housing for the urban poor. Finally, Chapter 6 sets out targeted policy recommendations based on the research findings of this study.

2. Methodology and Limitations

Definition of terms

Anti-competitive practice

For the purpose of this study, an anti-competitive practice is any activity undertaken by individuals or enterprises engaged in business activity that, either restricts the supply or purchase of goods and services, or obstructs free competition from taking place. This includes collusion between firms or an abuse of dominance by a firm that has captured a large share of the market (Government of Sri Lanka 2003).[4]

Housing

For the purpose of the study, an adequate house will be defined as a self-built or government-provided physical structure with a minimum of 500 sq ft of space that meets the following criteria (Ministry of Housing and Construction 2017):

- Legal security of tenure guaranteeing legal protection against forced evictions, harassment and other threats;
- Availability of services, materials, facilities and infrastructure including safe drinking water, adequate sanitation, energy for cooking, heating, lighting, food storage or refuse disposal;
- Affordability;
- Habitability in terms of physical safety and protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards;
- Accessibility infrastructure to address the specific needs of disadvantaged and marginalized groups (such as the poor, people facing discrimination, persons with disabilities, victims of natural disasters);
- Location with access to employment opportunities, healthcare services, schools, childcare centers and other social facilities, and not in dangerous or polluted sites or in immediate proximity to pollution sources;
- Cultural adequacy through respecting and taking into account the expression of cultural identity and ways of life.

Affordability

The determination of whether a house is decent and affordable encompasses both a financial component, which looks at the share of a total household income spent on housing, and a social component (Woetzel 2014). These components are determined by the square area, and the availability of basic infrastructure and access to essential services such as hospitals, schools as well as employment opportunities. In Sri Lanka, a floor area of 500 sq ft is deemed minimum for a housing unit. In general, the threshold at which owner-occupied or rental housing is deemed

[4] *This working definition of anti-competitive practices is derived from Sri Lanka's Consumer Affairs Authority Act, Sections 8 (a) and 35.*

affordable, is when a household spends less than 30% of their income on housing-related expenses, such as mortgage repayments (owners), rent payments(renters), and direct operational expenses such as taxes, insurance and service payments. In this study, we use the concept of lifetime earnings to determine the affordability of housing.

Urban Colombo

The scope of this study is limited to the urban areas of Colombo and Greater Colombo. In Sri Lanka, the state defines an urban area as an area that is administered by a Municipal or Urban Council. Colombo district is one of 25 districts in Sri Lanka and the city of Colombo is a highly populous city located in this district. The City of Colombo is administered by the Colombo Municipal Council. Greater Colombo encompasses several other peripheral towns located within the district of Colombo which are also administered by municipal or urban councils.

This study uses both qualitative and quantitative approaches to address the three main research questions. Sector reviews of key input markets as well as key informant interviews (KIIs) were conducted to identify specific types of anti-competitive practices in the construction industry. A Housing Affordability Index (HAI) was developed to assess the impact of anti-competitive practices on affordable housing.

Sector reviews

The sector reviews consist of in-depth analyses of three key input markets chosen on the basis of their importance to the construction and housing industries. On this basis, tiles, cement and aluminum were studied as they were considered an essential part of the construction of a house, irrespective of the scale, features, and amenities of the physical structure. This exercise aimed at understanding the structure of each market, unique features, demand and supply dynamics, conduct of players, effects of the import market, and any observed anti-competitive practices.

The key source of information was the annual reports of the listed companies in each industry for the period 2012-2022. The composition of listed companies in the market is explored in Section 4.1. The information gathered was cross-checked with key informant interviews, media reports and academic publications. Further, the import market analysis focuses on selected HS codes (both at the 6-digit level and 8-digit level) among finished products that were most relevant to household construction in Sri Lanka and had high import volumes..

Further more, the analysis does not include the actual domestic prices of construction materials over time due to the unavailability of this data. As an alternative, the Price Indices of Construction Materials maintained by the Construction Industry Development Authority (CIDA) were utilized. Therefore, any references to prices in the report pertain to the values derived from the price indices maintained by CIDA.

There were limitations in the granularity of the analysis due to the lack of publicly available information. In markets where most players were listed companies, information from their respective annual reports was sufficient to get a holistic understanding of the market. However, in markets where only a handful of participants are listed companies, the lack of publicly available information hindered the analysis.

Key Informant Interviews (KIIs)

As part of the qualitative analysis, KIIs were conducted with key stakeholders with links to the construction industry. Approximately 35 KIIs were conducted, mostly online. The interviewees were specialized in different fields of expertise such as housing, construction or competition law and policy (refer Table 1). The questionnaire used followed a semi-structured format (refer Appendix A) and the results of these interviews were collated along the lines of the main research questions.

Table 1: Breakdown of KIIs by Affiliated Organization

Organization	**Number of Key Informant Interviews (KIIs)**
Private sector	28
Government organization	3
NGO	2
Academic	2
Total	35

The researchers involved in the study also conducted KIIs with several hardware stores to understand anti-competitive practices in the market. These hardware stores play an important role in the supply chains for input materials, and are therefore privy to information that the public may not be aware of. These interviews were relatively informal, taking anywhere from five to 20 minutes and were conducted in person by visiting hardware stores in Colombo that stock the key inputs examined in this study. Locating retailers that sell aluminum and tiles was not difficult as hardware stores selling a particular product are usually concentrated in a particular region. However, this was not the case for cement. Due to the difficulty in locating cement stores, the researchers had to conduct telephone interviews. This method provided limited information due to the difficulty in conducting in-depth discussions over telephone. Once this process was completed, the researchers followed up with additional KIIs to corroborate their findings.

There were several limitations associated with the KIIs. Difficulties in obtaining interviews with certain individuals, whether due to their unavailability or their reluctance to participate, meant that the researchers were not always able to talk to those whose opinions would have provided valuable context to the study. Certain aspects of the discussion were sensitive, and a few individuals were reluctant to disclose information, despite assurances of confidentiality. These instances raise questions about how much of the information provided was self-censored.

At the time this study took place, Sri Lanka was experiencing severe fuel shortages, nationwide protests and extended power cuts, all of which hindered the study to a degree. Most noticeably, the fuel shortage meant that it was difficult to conduct interviews in person and they generally had to be conducted online.

Generally, KIIs are subject to sort of interviewer bias and in the case of this study, ruling out the possibility of this bias taking place would be problematic. It should be noted that caution was exercised as much as possible to ensure that no leading questions were asked.

With regard to interviews with owners of hardware stores, we encountered some difficulty in finding informants who were willing and able to answer our questions. Although the researchers were able to conduct several interviews with tile suppliers, they were only able to interview a small number of aluminum business owners and unable to find any cement retailers. There is, therefore, a possibility that the small sample size may have skewed the findings derived from the KIIs. To reduce the possibility of bias, the study triangulated the findings from these KIIs with the other KIIs conducted. Appendix E contains some of the key findings of these KIIs.

Housing Affordability Index

In addition to the qualitative analysis, the study also uses a quantitative approach to understand housing affordability in Sri Lanka. The study uses a Housing Affordability Index [5], which is constructed by dividing the estimated lifetime income of individuals by house prices. Due to data limitations, the lifetime income for each birth cohort is estimated following Abeysinghe and Gu (2010). We assume the average age of a person starting to build a house is 30 years, which is reasonable in the context of Sri Lanka.[6]

The estimates for lifetime income for Sri Lanka are based on the Household Income Expenditure Survey (HIES), which is conducted by the Department of Census and Statistics of Sri Lanka (DCS) every three years. This analysis uses HIES data for 2002, 2005, 2007, 2009, 2012, 2016, and 2019. In terms of house prices, a time series of average house prices is constructed using selected average house prices as starting values and the rate of change of increase in the construction cost index for all houses published by Construction Industry Development Authority (CIDA) of Sri Lanka since 1990. Average house prices as estimated by NHDA (Housing Needs Assessment and Data Survey, 2016) and Asia Securities (Majeed and Mendis, 2020) of LKR 2,239,985 in 2012 and LKR 5,185,029 in 2019 , respectively are used as starting values.

The analysis is based on certain assumptions. Firstly, a marginal propensity to save (MPS) of 20% over all income deciles and quartiles is assumed. However, this assumption may not be realistic given that the MPS at low-income levels may even be negative. Secondly, the study assumes that individuals start constructing or buying a house at the age of 30 based on previous literature. This assumption may be controversial given that it is hard to observe such uniformity in age in building or buying a house in the real world. Thirdly, to discount future income, an interest rate of 15% is assumed based on the Average Weighted Lending Rate (AWLR) in Sri Lanka. Also a savings rate was assumed at 5% over the estimation period based on the monthly Average Weighted Deposit Rate (AWDR).[7]

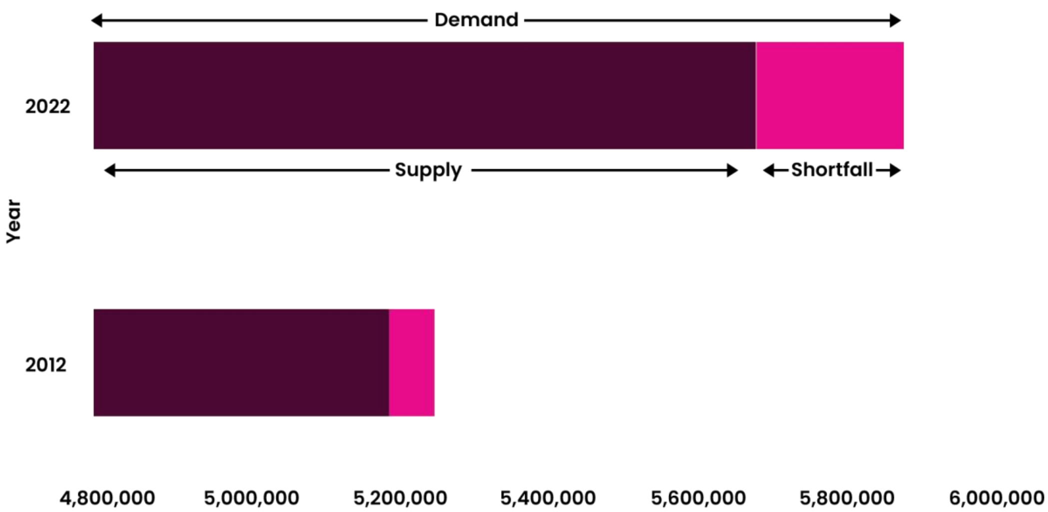
[5] *A detailed description of the methodology is included in Section 5.3.*
[6] *Due to education commitments and other factors, Sri Lankans do not move into their own home until their late 20s.*
[7] *The average monthly Average Lending Deposit Rate (AWLR) and Average Weighted Deposit Rate (AWDR) from January 2009 to December 2021 was 14.56% and 5.92 % respectively.*

3. The Sri Lankan Context

3.1. Housing demand and supply in Sri Lanka

Housing demand and supply in 2022 was estimated using data from the Census of Population and Housing Survey conducted in 2012 (the last available census data). According to this estimate, housing demand increased by 11.9% to 5,875,009 housing units from 2012 to 2022,[8,9] while housing supply increased by only 9.5% to 5,685,151 units leading to a gap between housing demand and supply of 189,858 housing units (refer Appendix B).[10]

Figure 1: Housing demand and supply in Sri Lanka in 2012 and 2022



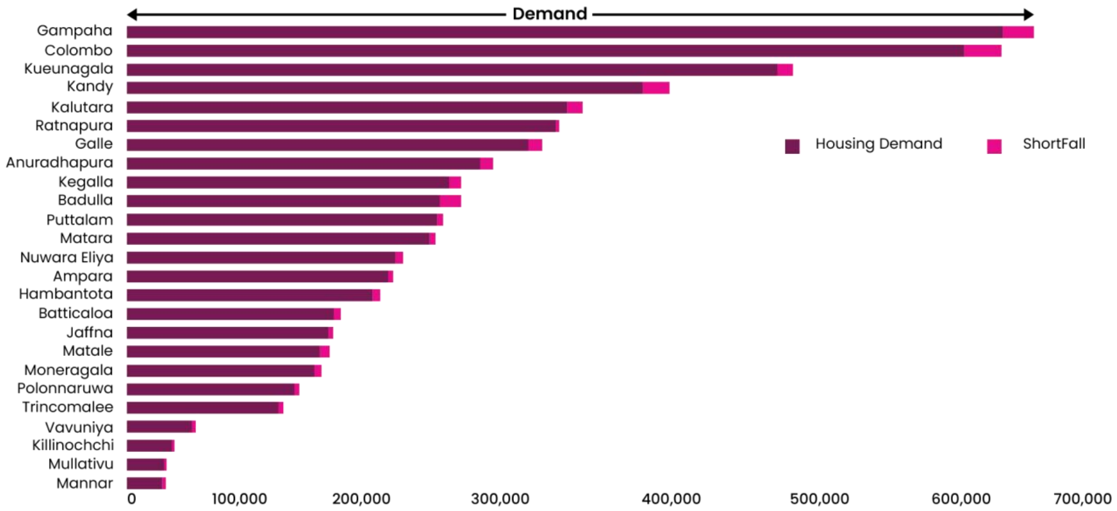
Source: Department of Census and Statistics and own estimates

[8] *The estimate for housing demand was made by extrapolating the data from the last available housing census which was conducted in 2012. For more sophisticated techniques to estimate housing demand, refer Karmali and Weng (2022).*

[9] *The demand for housing in 2022 was estimated by dividing the population in 2022 by the average size of household (the average household size in 2022 is assumed to remain the same as in 2012).*

[10] *The increase in the number of occupants in housing units in 2022 was estimated by applying the percentage increase in the population between 2012 to 2022 to the number of occupants in housing units in 2012 (the percentage growth of occupants from 2012 to 2022 was assumed to be the same as the rate of population growth between 2012 to 2022). The estimated number of occupants in 2022 was divided by the average household size (which is assumed to remain the same as in 2012) to obtain an estimate of the housing stock or the supply of housing in 2022.*

Figure 2 : Estimated housing demand and supply by district (2022)



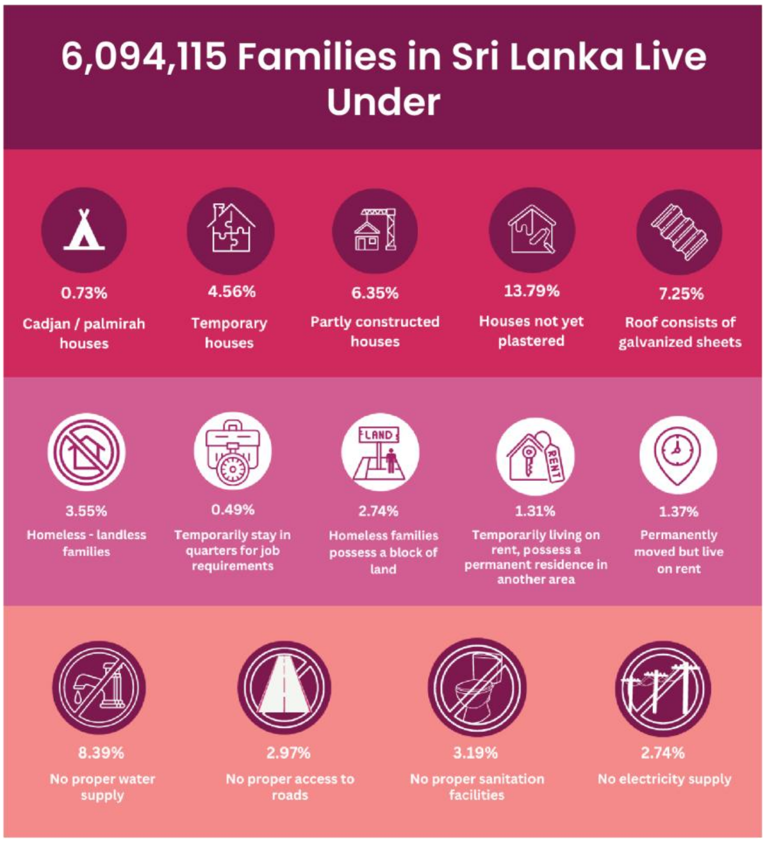
Source: Department of Census and Statistics and own estimates

Figure 1 shows the shortfall in housing units in Sri Lanka in 2012 and 2022. In 2012, there was a shortfall of 59,684 housing units. By 2022 this number is estimated to have increased to 189,858 units. In 2022, demand for housing in Colombo is estimated to have increased by 10% to 635,385 units, while supply only increased by 7.4% to 608,407 units. Hence, the shortfall in housing units in 2022 is estimated at around 26,978 units. The shortfall in housing units has pushed up house prices and decreased the affordability of housing. Given that total housing supply is falling short of demand, it is vital to find a way to increase the housing stock to keep up with the rising demand.

While these estimates capture the quantitative housing deficit, there are qualitative aspects that also need to be considered. Particularly in urban areas such as Colombo, access to housing has been mainly in the form of temporary housing. According to the Census on Population and Housing, although a significant proportion of Sri Lankans are housed, the quality of housing is poor. Housing Needs Assessment and Data Survey conducted by the National Housing Development Authority (NHDA) in 2016 captured the shortfall in the quality of housing. This Survey estimated that over 800,000 families were without a house of their own – a problem that is further aggravated by the fact that around 300,000 of the available housing stock in 2016 were temporary abodes. The larger shortfall in housing captured by NHDA is because the Authority considers adequacy and quality of housing in their calculation. Their findings on the adequacy of housing are summarized in Figure 3.

As depicted in Figure 3, while access to adequate infrastructure, such as water, electricity, sewerage, garbage disposal services, etc. has improved over time, it remains poor in densely populated urban areas.

Figure 3: The quality of housing in Sri Lanka



Source: Housing Needs Assessment and Data Survey 2016, National Housing Development Authority

The price and affordability of housing are determined by various factors. Housing demand is affected by demographic trends; cost and availability of housing finance; government policies in relation to taxation and subsidies; and property rights where insecure tenure could lead to underachievement in housing. While housing supply is affected by factors such as the availability of land and adequate infrastructure; the cost and availability of construction materials; and market inefficiencies. In addition, demand and supply of housing are affected by the behavior of consumers, producers and the government. They are both also affected by government policy and the regulatory environment. For instance, government policy relating to land use and building regulations directly affect the construction of housing, and hence the supply of affordable housing.

While the government has undertaken some housing projects catering mainly to low income segments, most housing has been met privately. However, overall these contributions have been inadequate to meet the overall demand for housing in Sri Lanka. In addition, most of the housing projects undertaken by private contractors have been more in the high-income range, further reducing the availability of affordable housing.

3.2. History of low-cost urban housing in Sri Lanka

Since independence, successive governments have implemented several policies and undertaken various projects to address the housing needs in the country. In this journey, the government has played many roles: policymaker, regulator, administrator, financing agency, facilitator, infrastructure developer, landlord and operator (Dolapihilla n.d.).

The constitution of Sri Lanka secures the political and civil rights of citizens. However, socioeconomic rights are not explicitly guaranteed under the constitution. The constitution, however, does say that the state must ensure the realization by all citizens of an adequate standard of living, including food, clothing, housing, employment, leisure, social and cultural opportunities (Wickramaratne Rupesinghe and Rupesinghe 2007).

There are several laws that govern different aspects of housing in Sri Lanka including laws on rent, public housing, land, housing construction and ownership of property, some of which are no longer applicable (see Appendix C). This section provides a brief history of the Sri Lankan government's housing policies and legislation from 1948 to the present.

1948 - 1970

The acute shortage of housing was initially addressed by the government through rent controls with the introduction of the Rent Control Act of 1941 and thereafter with the Rent Restriction Act of 1949. These measures discouraged the private sector from engaging in the housing sector, leading to the government's direct involvement, through the provision of housing loans with the enactment of the Housing Loans Act of 1949 and the setting up of the Housing Loans Board to promote private housing in the same year (Dolapihilla n.d.). With the establishment of the Department of National Housing Department in 1953, the role of the government in housing expanded to include the construction of housing schemes for purchase and rent. The enactment of the National Housing Act No. 37 of 1954 established the Office of the Commissioner for National Housing, empowering the commissioner to carry out any housing object specified in the legislation. The housing aims specified in the Act included the construction of residences; manufacture and supply of building materials; provision of roads and utilities; administration and management of buildings; provision of amenities to residents of housing schemes; development of land; and provision of financial assistance to carry out housing objects (Wickramaratne Rupesinghe and Rupesinghe 2007).

The 1950s and 1960s saw many urban housing schemes being established and overseen by the Colombo Municipal Council, the Public Works Department, the Department of National Housing and the State Engineering Corporation. Some of the more well-known projects from this period are the Kiribathgoda Housing Project, the Enderamulla Housing Project, the Bambalapitiya flats and the Anderson flats (Niriella 2010).The government also provided high-cost, high quality housing for public servants (Samaratunga and O' Hare 2013a).

In 1954, the National Housing Fund took over the National Loans Fund to provide loans to corporates engaged in housing and individuals. The government's role as financier was enhanced by the setting up of the National Housing Department and the State Mortgage and Investment Bank (SMIB) in the 1950s and 1960s, and later through the Housing Development Finance Corporation (HDFC) and the National Savings Bank (NSB) (Niriella 2010).

1970-1990

By the 1970s, Sri Lanka's economic policies had shifted towards socialist, left-leaning policies, and so did housing policy. The Rent Act of 1972 was enacted to protect tenants. More controversially, the Ceiling on Housing and Property Law of 1973 was enacted. The law allowed households in slums and shanties who lived in rented properties to own the houses they occupied, but also restricted individuals from owning more than one house per family (Niriella 2010). These policies, once again, discouraged the construction of houses by the private sector. However, the Condominium Property Act of 1970, and the Apartment Ownership Act of 1973, were expected to boost the construction of multi-story apartments.

The new focus at the time became the provision of welfare housing. Under the then Housing Minister, Pieter Keuneman, two new programs, the direct construction program and Aided Self-Help program were set up to expand public housing (Samaratunga and O' Hare 2013).

Under the Aided Self-Help program, which specifically targeted middle-income earners, the government provided land, building materials and selected necessary services while owners provided the labor to construct the house. A long term interest-free loan of 20-25 years was provided to meet costs of building materials and a ground rent was charged for the land. At the same time, model village programs and fisheries housing programs were undertaken to provide housing for the rural poor (Samaratunga and O' Hare 2013).

In 1977, policy direction took another turn with the electoral victory of the UNP government, with Ranasinghe Premadasa as Prime Minister and Housing Minister. The Urban Development Authority (UDA) in 1978, and NHDA in 1979, were established to implement public sector housing programs. Today, these two institutions remain the main government institutions mandated with constructing and operating public housing schemes.

The UDA Act 1979 vests UDA with powers to promote urban development, including urban housing. It is empowered to declare an area as a development area and to acquire those lands from its owners for the purposes of development. The NHDA Act of 1979 vests NHDA with the powers to construct residential premises; sell, lease or rent these premises; redevelop and resettle undeserved settlements; provide loans for the purchase of residences; establish housing estates; and acquire, lease, hire, mortgage, sell or dispose of movable or immovable properties (Wickramaratne Rupesinghe and Rupesinghe 2007).

Several housing programs were initiated in this period. Under the Hundred Thousand Houses program (1977-1983), 50,000 houses were to be built in rural areas under the Aided Self-Help program and the remaining 50,000 houses by the government in urban and semi-urban areas (Niriella 2010). With the slowdown in housing construction due to the escalation in construction costs and the general slowdown in the economy, a task force was set up to identify the weaknesses in the Hundred Thousand Houses program. The One Million Houses 'Housing For All' Program was initiated under NHDA between 1984-1989 to address the weaknesses in the previous program (Joshi and Khan 2014). The main thrust of the program was to "maximize participation of the community and minimize state intervention in meeting shelter requirements of the poor" (Niriella 2010, p91). During this period, Sri Lanka was also successful in lobbying the United Nations to declare 1987 as the Year of Shelter for the Homeless.

1990 - 2000

In 1990, the 1.5 Million Housing project was introduced to address both housing issues and poverty in urban, rural and estate sectors. The model villages (*aadarsha gammana*) and village reawakening (*uda gammana*) programs were initiated under this project (Niriella 2010). This project followed strategies that were similar to the one used during the One Million Houses program and led to the increase in brick houses with permanent roofs. However, the sustainability of the program was affected by financial constraints, a rise in the cost of building materials and the escalation of the civil war in the North and East (Niriella 2010).

In 1998, the growth in the urban population and the severe lack of adequate housing led to the setting up of a Presidential Task Force on Housing and Urban Development to identify and implement market-based redevelopment and relocation programs. Some of the initiatives during this period include the Real Estate Exchange (Pvt) Ltd (REEL), tasked with overseeing housing development, and the Sustainable Township Program (STP), which was tasked with relocating families living on lands to which they held no deeds and then freeing up that land for development. The most notable project that resulted from the STP was *Sahaspura* (Samaratunga and O' Hare 2013), which was Sri Lanka's first low-income, high-rise housing project.

2000 - 2010

In addition to the Sustainable Township Program, the Urban Settlement Improvement Project (USIP), a World Bank-funded project, as well as NHDA's other development programs were brought together to form NHDA's Action Plan which ran from 2000 - 2004 (Jagoda n.d.).

The housing programs conducted by the government fell under three broad categories: upgrading of slums, relocation, and a pre-sale housing program. The upgrading of slums was carried out by providing financial assistance to residents to upgrade their dwellings. Revocations occurred in two ways. In some instances, residents were temporarily moved out of their homes, and the government constructed houses with better facilities before moving the residents back in. Alternatively, relocation was carried out via aided self-help programs where NHDA provided loans to people to improve their houses. Under the pre-sale housing program, the government constructed housing which was then advertised for sale at concessionary rates (Jagoda n.d.).

Under Mahinda *Chinthanaya*, former President Mahinda Rajapaksa's 2005 election manifesto, several housing programs were initiated. The major housing project under this campaign was the *Jana Sevana* One Million Houses program (Niriella 2010). Another project, *Diriya Piyasa*, provided houses to approximately 5,000 low-income families (Niriella 2010). In 2008, the Urban Settlement Development Authority was set up to upgrade slums and shanties, as well as for infrastructure development (Joshi and Khan 2014).

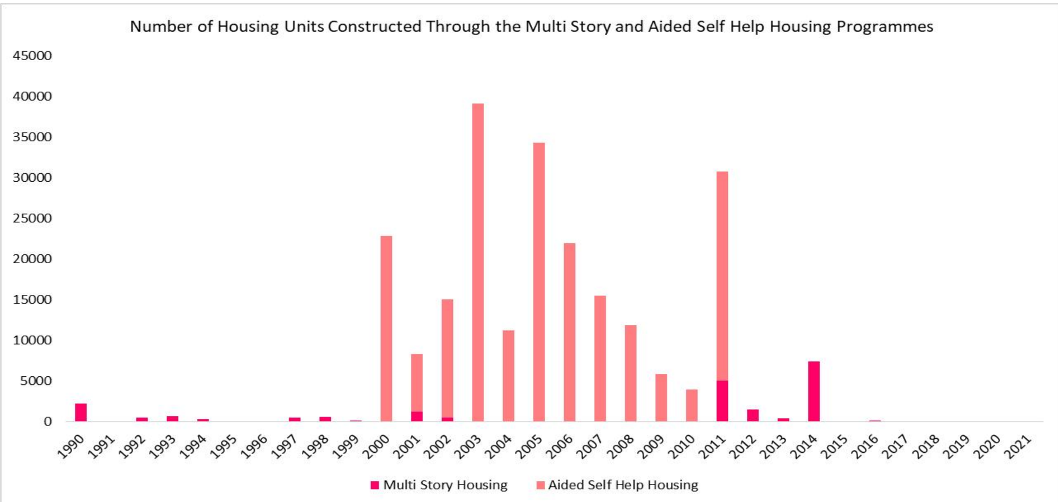
2010 - 2020

In 2010, UDA took over housing construction in Colombo from NHDA, which had thus far been responsible for housing. Under the Urban Regeneration program implemented in 2011, UDA embarked on a process of relocating those living in under-served settlements. One of the key programs of this period was the 66,000 Low Income Housing Project which was carried out with the intention of releasing urban lands for investment (Samaratunga and O' Hare 2013).

According to the National Housing Policy of 2017, the main objective in relation to housing was the optimization of valuable urban land using mixed development and declassification to create a variety of housing options (Ministry of Housing and Construction 2017). The three components of its development policy were redevelopment, relocation and consolidation. Redevelopment revolved around developing land held by the state and by individuals into housing, commercial and office spaces. Relocation involved resettling those who lived on lands that were prone to flooding or were needed for infrastructure development. Consolidation dealt with formalizing existing housing by granting legal and social recognition (UN Habitat 2016).

Although the government has a long history of involvement in the provision of low-cost housing, the net addition to the housing stock has been minimal. In addition to multi-storied housing, the government launched several aided self-help housing programs,[11] where beneficiaries contributed their own labor to construct the house. Since 1990, only around 236,740 housing units have been constructed under these projects, despite several housing projects initiated by the government. Hence, there is still a significant shortfall in housing in urban areas, and in Colombo in particular. A breakdown of housing units constructed through the multi-storied housing programs and the aided self-help programs are given in Figure 4.[12] UDA and NHDA have constructed a total of 21,196 multi-storied housing units during the period 1990-2021. The annual breakdown is given in Figure 5.[13]

Figure 4: Number of housing units constructed through the multi-storied and aided self-help housing programs by the NHDA



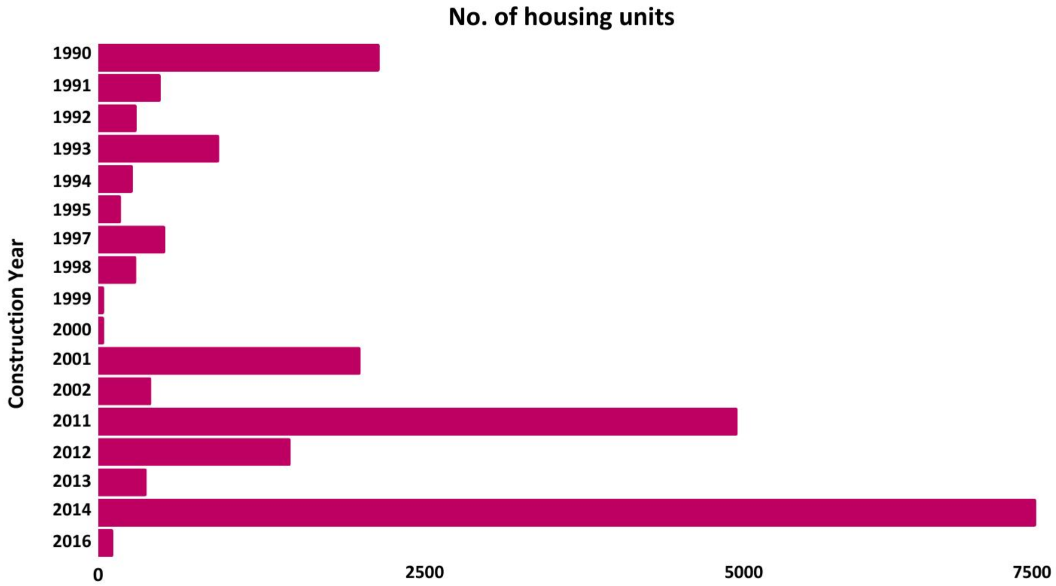
Source: National Housing Development Authority

[11] *Aided self-help housing includes housing for the estate and fisheries sectors; housing provided for individuals affected by disasters such as floods and tsunami; and housing programs initiated under each government such as Upahara, Deyata Kirula, and Sahasaviya.*

[12] *Information on self-aided housing for the period 1990-1999 and 2012-2021 could not be obtained from the relevant government authority.*

[13] *Multi-storied housing schemes are multi-year projects. As such, the year of commencing construction has been used instead of the year of completing construction, when assigning the housing units constructed to a specific year.*

Figure 5: Multi-storied low-income housing units constructed by UDA and NHDA



Source: National Housing Development Authority

3.3. Competition legislation and policy in Sri Lanka

It is important to unpack the policy levers available to the government in the context of the ongoing challenges in providing affordable urban housing as described above. Increasing the low-cost, urban housing stock is an enormously difficult and multi-faceted challenge. At the same time, the government can and should seek to ensure that competition in the inputs and construction services markets are free and fair. For example, unfair practices by dominant tile suppliers or collusion between primary cement producers would hinder the ability of the state to build or subsidize public housing. Ensuring competition on its own would not solve the housing crisis. However, doing so would reduce the already formidable challenges in establishing low-cost housing.

Competition law and policy are widely used by many countries to enhance consumer welfare and promote growth by ensuring markets work competitively and fairly. Competition policy includes antitrust legislation as well as policies such as trade liberalization, competitive neutrality, privatization, and relaxation of foreign investment and ownership regulation (Cook et al. 2004).

The proliferation of antitrust law and agencies in the past two decades demonstrates the importance placed on the central role of competition in development and growth. Motivations for the adoption of antitrust legislation include an international consensus that these laws are crucial for competitive and fair markets; serve as important signaling mechanisms to potential trade partners and investors; are often required for free trade agreements; and are essential for cooperation between national competition agencies in the event of cross-border anti-competitive issues.

Competition law in almost all jurisdictions is based on three pillars: prohibitions against anti-competitive agreements (for example, price fixing and bid rigging); abuse of dominance or monopolization (for example, predatory pricing, exclusive dealing, or other exclusionary conduct damaging competitors); and anti-competitive mergers and acquisitions. This framework is set out, for instance, in the objectives of the UNCTAD Model Law (UNCTAD 2010).

> *"To control or eliminate restrictive agreements or arrangements among enterprises, or mergers and acquisitions or abuse of dominant positions of market power, which limit access to markets or otherwise duly restrain competition, adversely affecting domestic or international trade or economic development."*

Given this contextual background, this section discusses the evolution of Sri Lanka's antitrust legislation and the scope and efficacy of the competition law as they pertain to the research questions explored in this study. Currently, Sri Lanka's antitrust legislation is embodied in the Consumer Affairs Authority Act, No.9 of 2003 (Government of Sri Lanka 2003).[14] This legislation repealed three laws that governed anti-competitive agreements, monopolization, merger control and consumer protection: the Fair Trading Commission Act, No.1 of 1987 (Government of Sri Lanka 1987), the Consumer Protection Act, No.1 of 1979 (Government of Sri Lanka 1979) and the Control of Prices Act, No.29 of 1950 (Government of Ceylon 1950). The Fair Trading Commission (FTC) had both investigative and adjudicative powers. In contrast, the Consumer Affairs Authority Act (CAA Act) provides for a separation of powers with the Consumer Affairs Authority (CAA) dealing with investigative functions while the Consumer Affairs Council (CAC) plays an adjudicative role based on the recommendations of CAA.

The CAA Act incorporates the language of consumer protection and anti-competitive agreements and is both a consumer protection and competition law. As stated in the Preamble of this Act (Government of Sri Lanka 2003):

> *"Whereas it is the policy of the Government of Sri Lanka to provide for the better protection of consumers through the regulation of trade and the prices of goods and services and to protect traders and manufacturers against unfair trade practices and restrictive trade practices.*
> *And whereas the Government of Sri Lanka is also desirous of promoting competitive pricing wherever possible and ensure healthy competition among traders and manufacturers of goods and services."*

The repealed FTC Act had provisions to deal with the three traditional competition law principles: abuse of dominance or monopolies (Section 12), merger control (Section 13), and anti-competitive

[14] *Competition provisions are also found in the Intellectual Property Act, No. 36 of 2003 (incorporation of an 'Unfair Competition' regime); the Company Takeovers and Mergers Code of the Securities and Exchange Commission (which applies to takeovers and mergers where the target is a listed public company); and the Public Utilities Commission of Sri Lanka Act, No.35 of 2002 (which includes* provisions on anti-competitive issues in selected public utilities). However, these laws are outside the scope of this study.

agreements (Section 14). In contrast, the CAA Act does not contain specific language pertaining to merger control. However, as set out in Section 8 below, this Act does cover traditional anti-competitive agreements and conduct. Further, the language of the Act contains references to abuse of dominance (Government of Sri Lanka 2003):

> *"The functions of the Authority shall be to-*
>
> *(a) control or eliminate-*
>
> *(i) restrictive trade agreements among enterprises:*
>
> *(ii) arrangements amongst enterprises with regard to prices;*
>
> *(iii) abuse of a dominant position with regard to domestic trade or economic development within the market or in a substantial part of the market; or*
>
> *(iv) any restraint of competition adversely affecting domestic or international trade or economic development;*
>
> *(b) investigate or inquire into anti-competitive practices and abuse of a dominant position…."*

While the goals of CAA, specified in Section 7, have a strong consumer protection flavor, several provisions cover anti-competitive conduct (Government of Sri Lanka 2003):

> *"The objects of the Authority shall be –*
>
> *(b) to protect consumers against unfair trade practices and guarantee that consumers interest shall be given due consideration;*
>
> *(c) to ensure that wherever possible consumers have adequate access to goods and services at competitive prices; and*
>
> *(d) to seek redress against unfair trade practices, restrictive trade practices or any other forms of exploitation of consumers by traders."*

In addition, the provisions on anti-competitive practices contained in the CAA Act (Section 35) replicates the text on these practices in the repealed FTC Act (Section 14):

> *"For the purpose of section 34, an anti-competitive practice shall be deemed to prevail, where a person in the course of business, pursues a course of conduct which of itself or when taken together with a course of conduct pursued by persons associated with him, has or is intended to have or is likely to have the effect of restricting, distorting or preventing competition in connection with the production, supply or acquisition of goods in Sri Lanka or the supply or securing of services in Sri Lanka."(Government of Sri Lanka 2003)*
>
> *"For the purpose of paragraph (c) of section 11, an anti-competitive practice shall be deemed to prevail, where a person in the course of business, pursues a course of conduct which of itself or when taken together with a course of conduct pursued by persons associated with him, has or is intended to have or is likely to have the effect of restricting, distorting or preventing competition in connection with the*

production, supply or acquisition of goods in Sri Lanka or the supply or securing of services in Sri Lanka."(Government of Sri Lanka 1987)

Some commentators, including some stakeholders interviewed for this research, observe that the CAA Act is not as comprehensive as the FTC law and that it does not have sufficient powers to address anti-competitive practices.[15] Moreover, unlike most other jurisdictions, the CAA Act does not clearly list and delineate the three traditional pillars of competition law (see Box 1 for a brief overview of the current state of competition law in representative jurisdictions) and does not address mergers and acquisitions.

Whether this lack of clarity matters is questionable. The integration of language pertaining to competition in the text of the CAA Act outlined above indicates that the law is technically broad enough to cover abuse of dominance and anti-competitive practices explored in this report. However, it is likely that an effective CAA will at least require a law that clearly and practically sets out enforcement priorities and mechanisms, modeled after laws in other jurisdictions. Amending the law will not be sufficient to energize competition law enforcement in Sri Lanka, but it may be a necessary preliminary step.

Box 1: Competition Law in Selected Jurisdictions

The US and the EU competition law regimes are the most advanced in the world, and most countries have modeled their laws, regulations, and procedures on one of these two regimes. Over the past several decades, there has been substantial convergence between the laws and policies of the US and the EU. During this period, there has also been an increase in the number of new competition agencies. [16] Most competition law regimes share the following common features:

- Ex-post prohibition against anti-competitive conduct through:
    - collusion between competitors
    - abuse of dominance
- Ex-ante prohibition against anti-competitive mergers

Specific anti-competitive agreements or practices that violate the law are often not set out with particularity in the laws themselves. However, agencies and courts interpret the law to address the facts and circumstances of a given practice, in order to determine whether or not it is anti-competitive.

A number of regimes also regulate other areas, such as state aid to public or private enterprises or price discrimination, and in some instances include equitable goals such as protecting disadvantaged groups. Some regimes also expressly integrate consumer protection enforcement such as false advertising, deceptive marketing, and consumer fraud.

[15] *See for instance Suthakar (2018).*
[16] *See for example, OECD (2021) on trends in the Asia-Pacific region.*

The US antitrust law is found in two primary sources: Sections 1 and 2 of the Sherman Act that prohibit anti-competitive agreements and monopolization (abuse of dominance), and the Clayton Act that regulates anti-competitive mergers. The Sherman Act emerged from a distrust of large dominant companies abusing smaller competitors or consumers. However, the state of the law, based on advances in economic thinking, has evolved. For example, certain conduct such as restrictions on distributors, controlling resale prices, exclusive dealing, and cooperation between competitors were often considered anti-competitive. US law now acknowledges the economic benefits to consumers of such conduct and weighs the possible benefits against potential harm. An important feature of US antitrust law is that "big is not necessarily bad", and that monopolies are not illegal just because they are dominant and control the market.

EU competition law, likewise, is found in two primary sources: Articles 101 and 102 of the Treaty of the Functioning of the European Union that prohibit anti-competitive agreements and abuses of dominance, and the EU Merger Regulation that prohibits anti-competitive combinations (mergers). As noted, there is substantial similarity between the application of EU and US competition laws, but some differences remain. For example, the EU is often more skeptical than the US on abuse of dominance and vertical agreements. Unlike the US with its singular focus on increasing consumer welfare, the EU incorporates other goals including concepts of fairness and equity, industrial policy, and protection of EU companies against foreign state-owned enterprises (SOEs) that receive state subsidies.

Many developing countries have also followed the three-pillar approach to competition law, while at times also including other unique goals. South Africa stands out in this regard. The South African Competition Act of 1998 prohibits anti-competitive agreements and practices, abuse of dominance, and anti-competitive mergers. In addition, the competition law expressly addresses the historical impact of apartheid and incorporates a number of social justice principles. These include the promotion of employment and advancement of socio-economic welfare; provision of opportunities for small and medium enterprises; and the facilitation of broader ownership, especially in communities that have experienced historical discrimination.

Most jurisdictions have adopted leniency programs to incentivize reporting of price-fixing cartels. Under such programs, a company that first reports the existence of a cartel to the government receives immunity from government prosecution and fines. Subsequent companies that self-report receive reduced penalties depending on the order in which they report. These programs have been highly effective in disrupting cartels as cartel members rush to obtain immunity and not be the last, most heavily-penalized company standing.

Practically, the scope of the law rests on its interpretation in courts as well as the actions taken by CAA and CAC. At present, anti-competitive practices under the CAA Act have not been subject to judicial interpretation. The interpretation of the scope of anti-competitive practices under the FTC Act in the 1996 case of *Ceylon Oxygen Ltd. v. Fair Trading Commission* ("Ceylon Oxygen Co. Ltd v. Fair Trading Commission and Another" 1996) is briefly set out in Box 2.

Box 2: Scope of Anti-competitive Practices: *Ceylon Oxygen Ltd. v. Fair Trading Commission*

The FTC investigated Ceylon Oxygen Ltd. with respect to a monopoly situation or anti-competitive practice in the supply of oxygen. Specifically, the FTC opined that Ceylon Oxygen Ltd. had entered into written agreements to supply gasses and other products in bulk to customers, with the requirement that buyers source all their needs from the company. The investigation focused on predatory pricing, exclusive dealing, and discriminatory discounts in the company's pricing policies.

In *Ceylon Oxygen Limited. v. Fair Trading Commission*, the Court of Appeal reviewed the scope of the FTC Act and held that the FTC did not have the jurisdiction to investigate predatory pricing, exclusive dealing, and discriminatory discounts. Instead, the FTC could only investigate monopolies, mergers, and anti-competitive practices. The Court did not recognize predatory pricing, exclusive dealing, and discriminatory discounts as examples of anti-competitive practices.

The Court's ruling, narrowly interpreting the scope of anti-competitive practices – which as mentioned, is replicated in the CAA Act – appears overly formalities. Whether the conduct falls within "anti-competitive practice" or a "monopoly situation", these could be and have been found to violate competition law in other jurisdictions.

This case may raise legitimate concerns with respect to an overly broad definition and scope of the law. Yet, experience from jurisdictions such as the US and the EU suggests that effective competition enforcement is possible without exhaustively defining every type of prohibited conduct. Given this precedent, the CAA Act can serve as the basis for an effective enforcement regime with respect to anti-competitive practices.

CAA and CAC have also been dormant with respect to anti-competitive practices in contrast to consumer welfare issues. Publicly available data contained in documents such as CAA Annual Reports indicate that the competition agency has neither investigated nor issued orders on anti-competitive practices from 2010 to 2020.[17] Specifically, the Annual Reports for this period do not contain any reference to actions based on Sections 34 or 35 of the CAA Act that cover anti-competitive practices. In comparison, the Reports describe significant investigative and adjudicative activity on issues relating to consumer protection, such as maximum prices, deceptive advertising, and product labeling. This lack of activity is despite CAA and CAC having the power to make binding orders and decisions on matters pertaining to anti-competitive practices.[18]

Evidently, institutional factors pertaining to regulatory governance shape the role and efficacy of CAA far more than any gaps in the law. This problem was highlighted in several KIIs and is one that

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[17] *See Consumer Affairs Authority Annual Reports at: http://www.caa.gov.lk/web/index.php?option=com_content&view=article&id=94&Itemid=537&lang=en [accessed on 20 November 2022].*

[18] *Section 60 also provides for following conviction after trial, financial penalties and imprisonment for offenses under the CAA Act. The 2021 Amendment to the CAA Act (Government of Sri Lanka, 2021), substantially increased financial penalties for certain violations.*

is pervasive in Sri Lanka's government administration, affecting not just CAA but many of the country's regulatory agencies. As argued in Evenett and Simon (2005), the effects of competition law can be neutralized, or even offset, if an agency lacks the resources or political freedom to carry out its functions.

Specifically, the stakeholder interviews carried out for this research point to politicization, lack of organizational legitimacy, and resource constraints that undermine the hiring of expert professionals. The necessary conditions for regulatory independence and protection from political capture, highlighted in Knight-John (2002a), are absent in CAA's governance structure. The power to determine appointments, salaries, and removal lies with the line minister and not a parliamentary body. CAA obtains most of its funding from the state, supplemented by fines. As stakeholders conversant with the entity argue, this arrangement is neither amenable to independence nor to the building up of professional capacity by being able to pay skills-based remuneration.

Further, as set out in Verite Research (2021), organizational factors, including an absence of clarity on processes such as how CAA and CAC conduct investigations, have eroded the agency's legitimacy. For example, key procedural elements such as time frames involved; whether representations can be made in writing or verbally and if electronic filing is allowed; permissible languages in which proceedings can be conducted; whether parties are permitted to bring in independent experts; and if interim orders to maintain the status quo can be made, are not clearly specified. The lack of clear and specific procedures, combined with the absence of publicly available data on investigations and orders pertaining to anti-competitive practices, have contributed to stakeholders preferring to go to courts rather than to CAA to seek redress for these practices.

What is clear is that while a competition law is necessary, it is not sufficient to deal effectively with anti-competitive practices. An independent competition agency equipped with adequate professional and financial resources is also needed. Meaningful regulation and enforcement will not occur without both elements in place, and companies will be free to violate competition laws with impunity, ultimately harming consumers and the economy.

An effective competition regime would also be better positioned to understand the markets for housing materials and housing construction, and to identify anti-competitive practices in the first instance. As discussed in Section 4, a real challenge exists in establishing potential violations due to lack of data, lack of corporate transparency, and lack of in-depth study of how specific markets operate. Indeed, even before any enforcement actions are considered, the competition agency should consider undertaking an evaluation of the low-cost housing industry, with a requirement for market participants to provide data, to better inform what problems to address, and how best to ensure lower prices and better quality.

3.4. Trade policy

From 1956, Sri Lanka adopted an import substitution industrialization policy. The state-led industrial policy was expected to generate employment to address a fast growing population. However, it was only in the 1960s, due to dwindling foreign reserves, that the government adopted import controls through licensing and quotas for importers (Athukoralage 1981). Inward-oriented economic policies continued to be adopted through the 1970s. However, the dismal state of the economy due to inward orientation and import substitution, and a change in government, led to a policy shift in 1977. The reversal in policy stance resulted in the lifting of quantitative import restrictions, revision of tariffs and the removal of price controls, making Sri Lanka one of the first countries in Asia to liberalize its economy (Atukorala and Rajapatirana 2012). Reforms were made in the area of trade liberalization along with the removal of price and exchange controls and the gradual reduction of the state's involvement in economic activities. However, the early gains from liberalization were soon reversed due to policy shifts as well as the civil war that emerged. There was a second wave of liberalization and trade reform in the 1990s with further relaxation of exchange controls and reduction of tariffs, together with incentives to attract foreign investments. This outward-oriented economic policy framework continued until the early 2000s when pressure on the fiscal balance and the emergence of populist and protectionist policies (Atukorala 2012) led to a reversal of the liberalization program that had been followed thus far.

This period also saw a reversal in the growth strategy from a predominantly manufacturing-led export-oriented growth strategy to an economic boom driven by non-tradables. This shift was further reinforced by macroeconomic policy favoring an overvalued exchange rate and the state expanding its role in the economy. The focus on debt-financed large infrastructure projects saw the contribution of the construction industry to GDP increase significantly. Unfortunately, these changes had a detrimental effect on the affordable housing sector due to increases in the cost of construction materials and lack of their availability.

Severe balance of payments crises led to across-the-board import controls being imposed to protect dwindling foreign reserves. These policies had a detrimental impact on the availability and access to construction materials, as Sri Lanka did not have the installed capacity nor the raw materials to scale up production to meet domestic demand.

The reluctance of successive governments to undertake comprehensive reforms prevented Sri Lanka from developing a competitive tradable sector (Atukorala and Wagle 2022). The need for higher revenue as well as pressure from domestic industrialists led to high tariff levels, which afforded greater protection to domestic industries. The argument for import controls was to encourage domestic production. However, given the lack of availability of key raw materials and inputs within the country, import controls have only served to increase the price and availability of domestic substitutes in most instances, rather than develop competitive domestic industries. It has also led to a misallocation of resources as high domestic prices led more resources to be diverted to these protected industries.

One sector adversely affected by the government's trade policy has been the construction industry. High tariffs on key building materials have benefited producers at the cost of consumers, who have to either pay a higher price for those goods or make do with low quality products. The tariffs have also led to shortages in key building materials as domestic producers are unable to meet demand. The use of ad hoc tariff changes to protect certain domestic industries against imports, while favoring selected domestic industries, has had a detrimental effect on consumer welfare.

Section 4 analyzes more closely the impact of trade policies on specific markets for construction inputs. Unduly high tariff rates imposed primarily through the use of para-tariffs and the inclusion of certain construction materials under the Board of Investment's (BOI) negative list in various free trade agreements were some measures used to protect certain industries. The sweeping import bans imposed by the government in April 2020, in a bid to reduce foreign exchange outflows during the COVID-19 pandemic, led to severe shortages in the key construction materials, leading to wait times of over a year and extortionary price increases. Inconsistent government policies were witnessed with multiple relaxations and reinstatement of these restrictions within short periods of time. A detailed analysis of the trade policies affecting three key input markets, namely cement, tiles and aluminum is discussed in Section 4.1.

4. Anti-competitive Practices in Key Input Markets in the Housing Industry

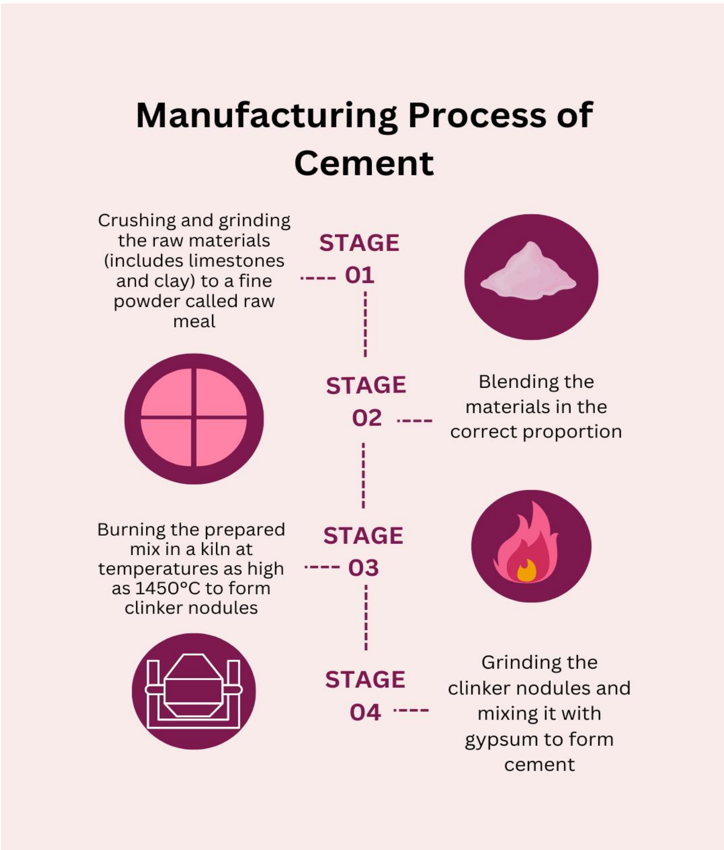
4.1. Sector reviews

4.1.1. Cement industry

4.1.1.1 Manufacturing process

Manufacturing cement is a complex process. Due to the energy intensiveness and highly technical nature of this process, cement manufacturers can incur high capital costs to build the specialized plants and equipment needed. The detailed breakdown of the manufacturing process is given in Figure 6. An overview of the global cement market can be found in Appendix D (bullet point 1).

Figure 6: Manufacturing process of cement



4.1.1.2 Structure of the local market

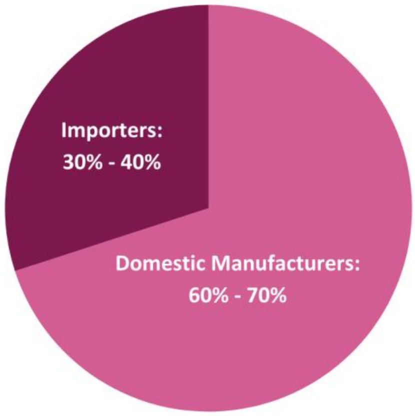
The supply side of the cement market is characterized by players of different size and scale, with a direct correlation observed between the size of the player and the stage at which they enter the value chain. Accordingly, these suppliers can be broadly categorized into four groups (Table 2).

Table 2: Overview of cement supplier groups in Sri Lanka

<table>
<tr><th>Supplier group</th><th>Stage at which they enter the value chain</th><th>Size/scale</th></tr>
<tr><td>Integrated suppliers</td><td>Stage 1: Operate their own mines and quarries locally while the raw materials unavailable locally are imported.</td><td rowspan="2">The largest players with significant capital investments in land, manufacturing plants, specialized equipment, vehicle fleets, etc., needed to quarry, grind, mix, and distribute cement domestically.</td></tr>
<tr><td>Clinker importers</td><td>Stage 3: The clinker nodules are imported. The process of grinding and mixing to form cement is done domestically.</td></tr>
<tr><td>Bulk importers</td><td>The finished product, cement, is imported in bulk (over 50 kg).</td><td>The second largest players. As these players do not actively participate in the production process, they have significantly less capital investments than the previous two groups. Most of their investments are in storage facilities.</td></tr>
<tr><td>Bag importers</td><td>The finished product, cement, is imported in bags of less than 50 kg.</td><td>The smallest players. These players require the least investment costs and most of the suppliers fall into this category.</td></tr>
</table>

For this study, integrated suppliers and clinker importers (the first and second group of suppliers) will be referred to as domestic manufacturers, and bulk and bag importers (third and fourth group of suppliers) will be referred to as importers. Accordingly, the division of market share between these two broad supplier groups is given in Figure 7.

Figure 7: Market structure by supplier group



Source: Tokyo Cement Company (Lanka) PLC Annual Reports

4.1.1.3 Overview of the domestic players and local demand

As the largest players in the market, domestic manufacturers hold the bulk of market share. The market is dominated by three large players as shown in Table 3.

Table 3: Selected information on the largest cement market players

Company	**Market Share**[19]	**Owners**
Tokyo Cement Company (Lanka) PLC	32.9%	St. Anthony's Consolidated South Asian Investments UBE Singapore Holdings
Siam City Cement (Lanka) Limited (INSEE Cement Sri Lanka)	29.9%	Siam City Cement Public Company Limited (SCCC) of Thailand
Lanwa Sanstha Cement Corporation (Pvt) Ltd	9.7%	Sister company of Ceylon Steel Corporation Limited

Source: Majeed and Mendis (2020)

[19] *Market share is calculated based on the estimated installed capacity of the domestic manufacturer as a share of total market capacity in 2021.*

A. Tokyo Cement Company (Lanka) PLC

Tokyo Cement PLC as a group engages in manufacturing, importing and marketing of cement; and operating biomass power plants. Launched in 1982, it is Sri Lanka's first privately owned cement manufacturer, and by 2021 had become the market leader holding around 33% of market share. As at 31 March 2022, the group consisted of four subsidiaries: Tokyo Eastern Cement Company (Private) Limited (100%), Tokyo Cement Power (Lanka) (Private) Limited (100%), Tokyo Super Aggregate (Private) Limited (51%), and Tokyo Supermix (Private) Limited (100%).[20]

As the company invested heavily in the Trincomalee port, it objected to a multinational cement factory establishing a packing plant in the same port. As a result, in October 2013, it successfully lobbied the government to introduce a policy limiting one cement factory to each port (Tokyo Cement PLC 2013).

Box 3: One Cement Factory Per Port Policy

In October 2013, the government introduced a policy limiting one cement factory to each port. This policy was in response to Tokyo Cement PLC successfully lobbying the government when Holcim Lanka, a cement manufacturing company that had previously been operating in the country, was to set up a factory in the Port of Trincomalee, the harbor Tokyo Cement PLC operates in.

The rationale provided by the government for this policy was based on the interest of protecting the existing large-scale investments of domestic manufacturers until the full potential of existing investments are fully realized (Daily FT 2023). With the passing of this policy, the number of domestic manufacturers were effectively limited to 4, equal to the number of ports in the country.[21] Currently the 4 ports, Trincomalee, Galle, Colombo, and Hambantota, are occupied by Tokyo Cement Company (Lanka) PLC, INSEE Cement Sri Lanka, Tokyo Cement Company (Lanka) PLC and Melsta Gama, and Lanwa Sanstha Cement Corporation (Pvt) Ltd respectively.

B. Siam City Cement (Lanka) Limited (INSEE Cement Sri Lanka)

INSEE holds the second largest market share and is the only fully integrated domestic cement manufacturer, entering the cement production process from the first stage as opposed to third stage as is the case with all other domestic manufacturers. Further, as one of the largest manufacturers, it has been awarded some of the largest government contracts such as the Uma Oya Development Project (INSEE Cement Sri Lanka n.d.).

[20] Tokyo Eastern Cement Company (Private) Limited engages in manufacturing and marketing of cement and value-added products and operation of a biomass power plant. Tokyo Cement Power (Lanka) (Private) Limited is involved in the generation of power. Tokyo Super Aggregate (Private) Limited is involved in manufacturing sand and aggregates (granular particulate material used in construction). Tokyo Supermix (Private) Limited engages in the manufacturing and marketing of ready-mix concrete for the local market.

[21] The Galle Port is not a deep-water port, and hence ships above 30,000 MT cannot enter the port. The operations of the INSEE Cement factory located there have, therefore, been limited.

C. Lanwa Sanstha Cement Corporation (Pvt) Ltd

Lanwa Sanstha is the latest BOI approved entrant into the industry, setting up in the Hambantota Port. The plant includes a bagging and grinding facility which commenced operations in March 2022 (Lanwa Sanstha Cement Corporation (Pvt) Ltd n.d.).

The total installed capacity of local cement manufacturers remained at 5.7 million metric tonnes (MT) per annum in 2021. Capacity utilization was 77.4% in 2021, an increase of 9.9% compared to the previous year and the highest recorded level since 2016. This peak is reflected in the total cement availability as the composition of supply switched from being import product-driven to domestic products. The reasons for this switch are explored in detail in Section 4.1.1.5.

4.1.1.4 Local market regulations

The production and sale of domestically produced cement are both highly regulated by the Sri Lanka Standards Institute (SLSI) and CAA. One example of SLSI regulations in production is the slag content (a by-product of steel production and a more environmentally-friendly clinker substitute) in cement, which cannot exceed 20% (*Economy Next* 2019).

On the retail end, from 2013 to October 2021, the price of all types of cement was subject to a Maximum Retail Price (MRP), imposed and controlled by CAA. These prices were supposed to be determined by a pricing formula. However, concerns were raised by local manufacturers regarding the application of this formula. To back their claims, these manufacturers point to a lack of consistency in price changes and the lack of dynamism of the formula to account for external shocks.

During the years in which the MRP was in effect, changes to retail prices were infrequent, even during times of external shocks that severely affected operations. For example, during the financial year 2018-2019, the rupee depreciated by 16%. This depreciation caused a significant operating cost increase for all companies, as many of them are dependent on imports to some degree. This issue was exacerbated by delays and non-payment of government contracts. While the price of related industries such as steel rose by 45% to account for these adverse shocks, the price of cement products increased only marginally (Tokyo Cement 2018).

By contrast, the price of imported cement was not controlled, and importers also benefited from the free trade agreements that allowed duty-free imports into the country. This lack of import controls was in contrast to the trade policy set out in Section 3.5, where protectionist policies have been used to protect domestic manufacturers. Initially, duty-free imports were only allowed from India and Pakistan, but commencing from 2017-2018, the government allowed duty-free imports of cement from all countries (Tokyo Cement PLC 2017).

As a result, domestic manufacturers have raised concerns regarding an unequal playing field due to the following reasons:

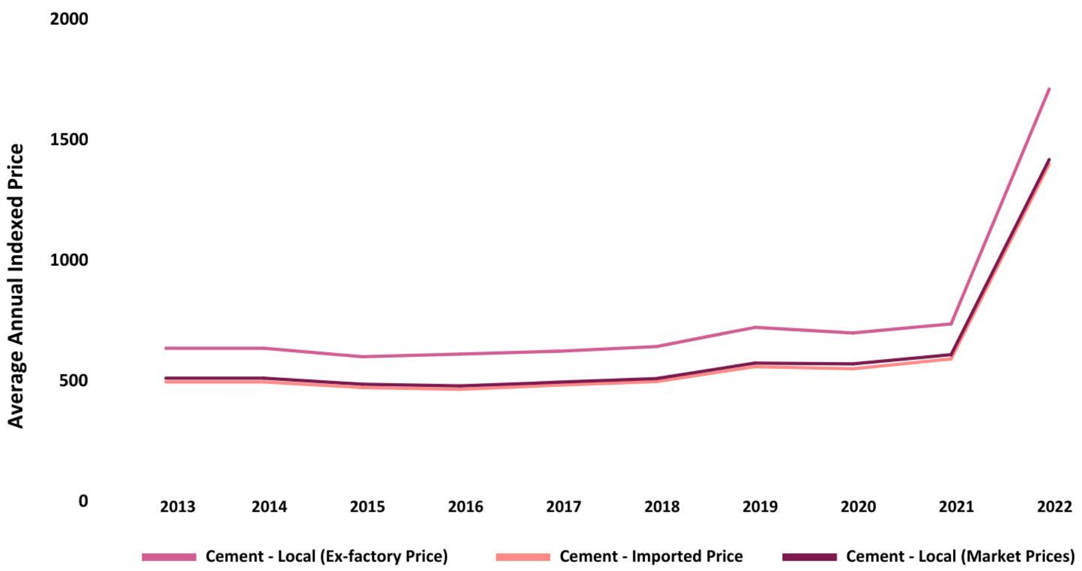
a. Importers incur significantly less costs than domestic manufacturers due to their relatively minimal capital costs, and imports being duty-free

b. Domestic manufacturers are unable to competitively price their products at market rates to account for changes to cost structures

c. Importers allegedly dump low quality products into the local market. Sri Lanka has enacted the Anti-dumping and Countervailing Duties Act, No. 2 of 2018. Domestic manufacturers are able to pursue legal action under this law if they believe dumping takes place (Government of Sri Lanka 2018). This study was unable to find credible evidence of dumping and domestic manufacturers have not taken legal action under the anti-dumping law.

Figure 8 below shows the price differences between domestic and imported cement. As Figure 8 shows, the price of imported products has consistently been lower than the price of domestic manufactured cement. This difference is due to the differences in scale of production between domestic and foreign manufacturers.[22] The significantly larger scale of foreign manufacturers allows them to enjoy greater economies of scale, which can be passed on to importers in the form of lower prices. This advantage allows importers to price their products below domestically produced cement products, even with the existing tariff structures, which impose a heavier tax burden on importers compared to domestic manufacturers. However, in the procurement process for large scale infrastructure projects undertaken by the government, domestic manufacturers are given first preference.

Figure 8: Price differences between domestic and imported cement



*Prices are annual averages. In 2022 the average price over the period January to August 2022 has been used.

[22] Local producers do not produce to the same scale as that of Indian and Pakistani manufacturers.

Source: Bulletin of Construction Statistics 2011-2022, Construction Industry Development Authority

1.5 Import market

For this study, the products examined are those with the highest volume of imports. Using this criteria, three HS codes have been selected.[23] Figure 9 maps out the annual quantity imported under the selected HS codes, and the changes in price for cement in the domestic market together with changes in the tariff structure.[24]

Figure 9: Changes to quantity of cement imported, prices, and tariff structures

Note: The background has been highlighted for the years in which the tariff structure was changed.

Sources: Bulletin of Construction Statistics 2011-2022, Construction Industry Development Authority; Import Data 2010-2021, Department of Customs; and Gazettes published by the Department of Customs

Figure 9 shows the imports of selected categories of cement products from 2013 onwards. It shows that the quantity imported is more sensitive to tariff revisions than price. This reduced sensitivity is a result of the MRP imposed by CAA. Domestic manufacturers have raised issues with the time lag in price adjustments to changes in tariffs and other external policy changes due to the MRP.

Imports of all categories of cement products declined significantly in 2020. This decline reflects the government's import restrictions, introduced on 16 April 2020 on several products, including cement, tiles, and bathroom fittings, to limit foreign exchange outflows during the pandemic. While imports of many commodities were suspended, imports of some commodities were allowed under a credit facility of three months (Government of Sri Lanka 2020). The reduction in imports in 2020 and 2021 due to the import restrictions is evident in the analysis of the tile and aluminum market structures as

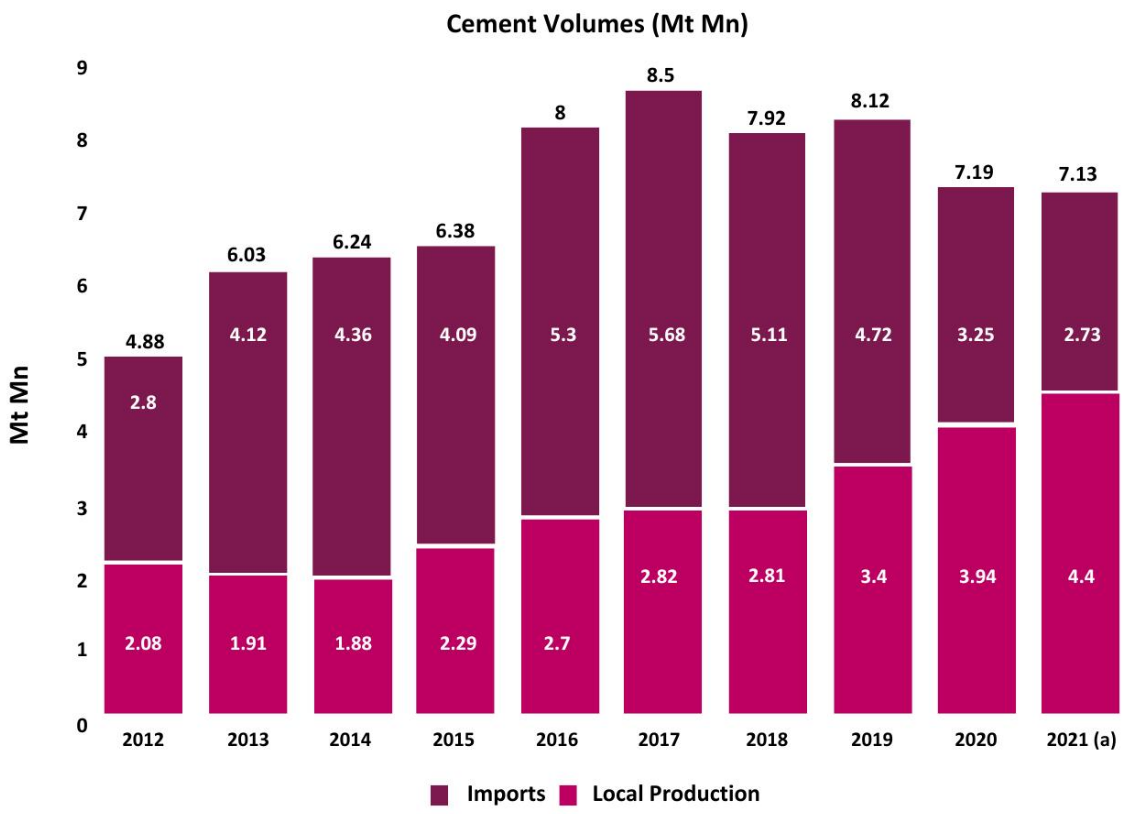
[23] The HS codes shortlisted are 252310 (cement clinkers), 25232930 (other Portland cement imported in packings of over 50 kg or in bulk), 25232920 and (other Portland cement imported in packings of 50 kg and below)

[24] The changes to tariffs during the period analyzed have consistently been upward revisions except for 2019. With the change in government in 2019, sweeping reductions were made to tariffs.

well. A timeline of regulatory changes relating to the import suspension can be found in Appendix D (bullet point 2).

With restrictions on imports in 2020, the demand for locally manufactured cement increased. While imports dominated the market until 2019, domestic production gained traction and dominated the market from 2020 onwards. The impact of these restrictions was reflected in the price of cement, with the gap between the prices of imported cement and the local market prices reducing as shown in Figure 8.

Figure 10: Breakdown of cement production by supplier group



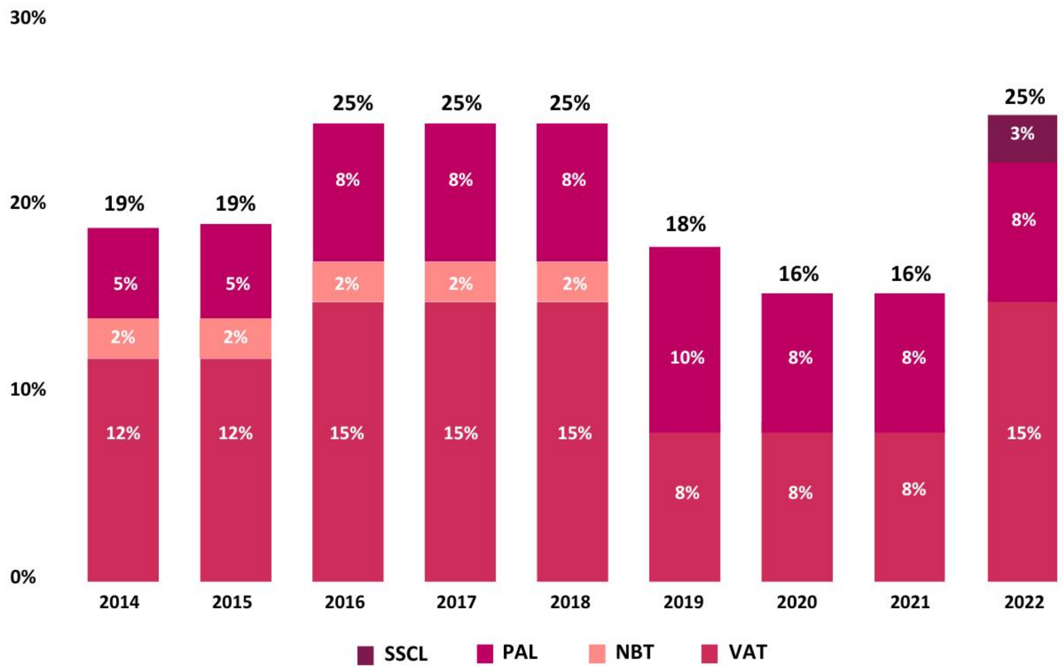
(a) 2021 Provisional values

Source: Economic and Social Statistics of Sri Lanka 2022

While import suspensions and tax revisions affected all suppliers, importers (both bulk and bag importers) were disproportionately affected. Although domestic manufacturers experienced difficulties in securing supplies, they were able to minimize the adverse impacts by utilizing substitutes for clinkers (such as fly ash and slag). This shift is reflected in the data where, between 2020 and 2021, bag importers (those that import Portland cement of 50 kg and less) experienced the largest reduction in quantity imported, by 65%. In comparison, bulk importers and clinker importers experienced reductions in quantity imported of 8% and 23% respectively for the same period.

In addition to the import restrictions, the tariff structure has created an uneven playing field for smaller players. Figure 11 provides an overview of the taxes and tariffs imposed on clinker importers/domestic manufacturers over the period 2014-2021.[25]

Figure 11: Changes in tariff composition and total tariff rates for clinker importers.



Source: Department of Customs

The tariffs and taxes imposed on imports of clinker include Value Added Tax (VAT), Nation Building Tax (NBT) and Port and Airport Levy (PAL)[26]. The total taxes for this supplier group between 2014 and 2022 ranged from 16-25%. In comparison, a CESS ranging between 8-14% was additionally imposed on both bag and bulk importers over the same period.[27] In 2021, a CESS of LKR 2 per kg and LKR 3 per kg was imposed on bulk and bag importers respectively. These additional tariffs increase the tax burden on these two supplier groups. For example, the total tax rate imposed on clinker importers, bulk importers, and bag importers are 18%, 26%, and 32% respectively in 2019. Further, the smallest supplier group in this market, bag importers, have been consistently taxed the highest while the largest suppliers, domestic manufacturers, have been taxed the lowest.

Higher taxes on bag importers may have direct impacts on the cost of construction for low-income households. The purchasing decisions of these individuals are more likely to be governed by the price of products rather than perceived quality or brand. Further, their houses are also likely to be of smaller square area and constructed in stages over a longer period due to income constraints. Hence, they are more likely to purchase cement in bags, as and when they need to, as opposed to purchasing in bulk, and are also more likely to purchase the cheaper option available in the market.

[25] The taxes and tariffs for each year represent those that were in place at the end of each respective year.

[26] A CESS of LKR 1 per kg was imposed on clinker importers for a brief period in 2020. Clinker imports were also subjected to SSCL taxes from 2022 onwards.

[27] CESS is a para-tariff, levied solely on imports in addition to the standard indirect taxes such as those imposed on domestic products (Law Insider n.d.).

Hence, such trade policies and other government policies such as MRPs are likely to disproportionately affect the affordability of housing for low-income groups.

4.1.2. Tile Industry

1.1 Manufacturing process

The manufacturing process for ceramic tiles, much like cement, is a capital-intensive, high-energy activity requiring specialist equipment and tunnel kilns equipped to reach high temperatures. A detailed breakdown of the manufacturing process is given in Figure 12. While the manufacturing process may vary slightly based on whether the finished product is a glazed or unglazed tile, it remains largely the same. An overview of the global tile market and its segmentation can be found in Appendix D (bullet points 3 & 4).

Figure 12: Manufacturing process of tiles

Manufacturing Process of Tiles

STAGE 1 Batching	The raw materials are mixed at a specific ratio and proportion by weight.
STAGE 2 Ball Milling	The mixture is combined with water and other additives and then blended, homogenized and grinded by means of alumina balls to form a slurry.
STAGE 3 Aging	The slurry is sent to underground storage and aged for 24h.
STAGE 4 Spray Drying	The aged slurry is fed into the atomizer which sprays it into hot air to produce powder. This powder is cured for 12- 24h.
STAGE 5 Dry Pressing	The powder is fed into the tile molds where the residual moisture content and high pressure converts it into a solid mass.
STAGE 6 Preheating (Drying)	The tiles are dried at temperatures of 100-400 degrees celsius to remove residual moisture.
STAGE 7 Glazing	The tiles are glazed by roller glazing, spraying, water fall, dipping, screening or dry glazing.
STAGE 8 Firing	The kiln heats the glazed tiles from 300-1200 degree celsius and all remaining moisture is removed.

Source: Steemit.com (2017)

1.2 Demand and the structure of the local market

In Sri Lanka, the most utilized tiles are wall tiles and floor ceramic tiles. The annual demand, on average, is between 25-30 million square meters, with floor tiles accounting for about 78% of the total demand. The different sizing options available in the market for floor and wall tiles is given in Appendix D (bullet point 5).

Demand for domestically manufactured tiles has been driven by the residential sector, both new constructions and refurbishments. Together, they account for roughly 75% of demand with other sectors such as commercial, leisure, and government construction comprising 25%.[28] A further analysis of demand in the residential sector shows that a large proportion is driven by lower- and middle-income segments. For these segments, tiles are perceived as a luxury product and demand is therefore directly correlated with income growth. Tiles as a floor covering is not the first preference, economically, for a low-income earner, but rather something they aspire towards.

Historically, the supply side of the market has comprised both importers and domestic manufacturers, with the former importing finished products into the market. Importers did not actively participate in any stage of the production process. Instead, they source the finished tiles from countries such as China, India, and Italy and enter the value chain at the distribution stage. Hence, these importers did not bear the significant capital costs associated with producing tiles and tended to be small in scale. In terms of density, importers comprised the majority of suppliers in the market. Domestic manufacturers are substantially larger in scale with heavy investments in specialist equipment, plants, land, storage etc. The start-up costs involved in entering this stage of the value chain creates barriers to entry. Presently, there are only four domestic tile manufacturers.

The composition of suppliers changed following the sweeping suspension of imports with effect from 16 April 2020.[29] As explained in Section 1.5 of 4.1.1 (the cement industry), the government placed restrictions on a large number of products, including cement, tiles, and bathroom fittings, in a bid to limit foreign exchange outflows during the pandemic (Government of Sri Lanka 2020). Prior to the suspension, importers and domestic manufacturers met roughly 50% of market demand each (JB Securities 2021). However, after the import restrictions, only domestic manufacturers operated in the market. The elimination of importers has resulted in an oligopolistic market structure.

There are four domestic manufacturers operating in the market, each targeting different market segments through quality and price differentiation.

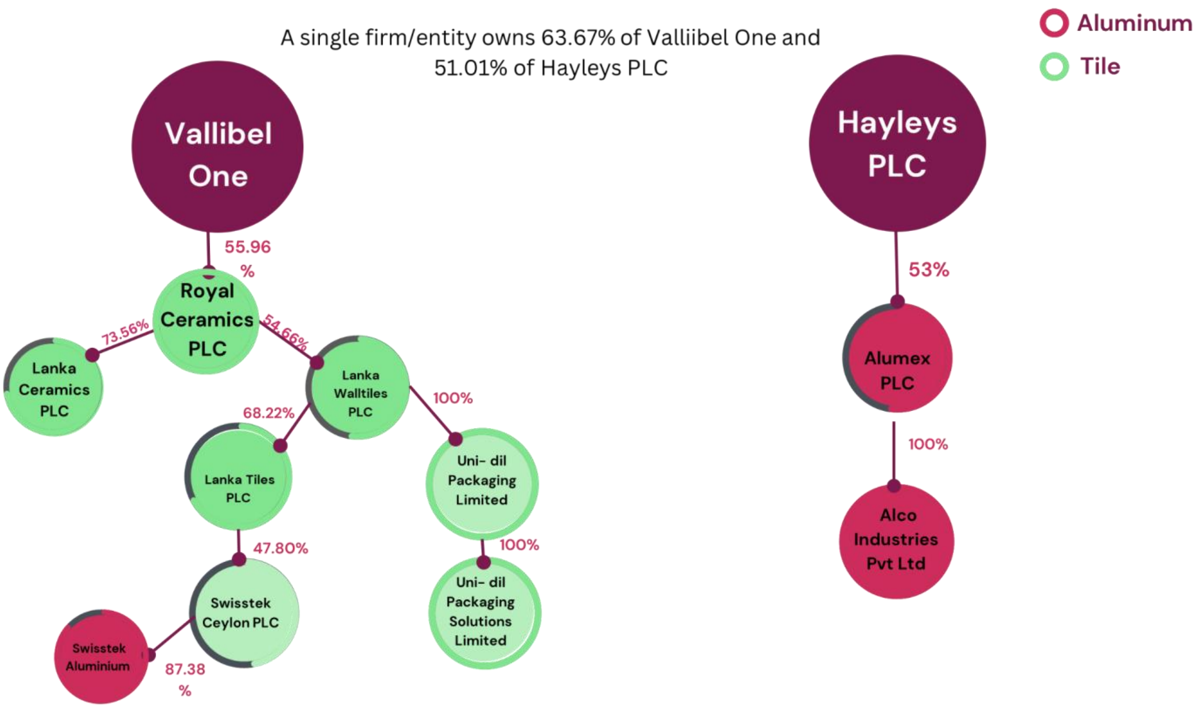
Table 4: Summary of domestic tile players and ownership

<table>
<tr><th>Company</th><th>Market share</th></tr>
<tr><td>Royal Ceramic Lanka PLC</td><td>25%</td></tr>
<tr><td>Lanka Tiles PLC</td><td rowspan="2">43%</td></tr>
<tr><td>Lanka Walltile PLC</td></tr>
<tr><td>Macksons Tiles Lanka (Pvt) Ltd</td><td>32%</td></tr>
</table>

[28] *Sectors such as commercial, leisure, and government construction rely on imported tiles for large-scale development projects.*
[29] *Refer to Section 4.1.1 for more information.*

Despite the presence of four tile manufacturers in the market, an analysis of the shareholding of these companies highlights the effective ownership structure. As seen in Figure 13, Royal Ceramic Lanka PLC, Lanka Walltile PLC, and Lanka Tiles PLC are owned by one entity. Therefore, while the number of players may lead to the categorization of this market as an oligopoly, the ownership structure makes the market for tiles, in effect, a duopoly.

Figure 13: Cross ownership in the tile and aluminum market



Sources : *Royal Ceramics PLC (2021); Alumex PLC (2021); Hayleys PLC (2021); Vallibel One PLC (2021)*

Henceforth, Royal Ceramic Lanka PLC, Lanka Tiles PLC and Lanka Walltiles PLC will be referred to as the Group.

A. Royal Ceramics PLC

Royal Ceramics PLC offers the most high-end products to the market. While the company targets high- to middle-income consumers, it places a heavy emphasis on the high-income segment with its products being priced at a premium. Its products range from tiles and associated products such as mortar and grout to sanitaryware.

Established in 1990, it has significantly broadened its business focus to become a conglomerate over the past three decades.[30] This rapid expansion was driven by a series of acquisitions by the company from 2010 onwards. Hence, its operations are geared more towards that of a holding company, and by March 2022, the group comprised 10 subsidiaries, 2 associate companies, and over 13 sub-subsidiaries. This cross-utilization of resources will be explored later in the study. In the

[30] *The conglomerate operates in a wide range of areas from the manufacture of tiles and associated products to aluminum, confectionary items, and property development.*

financial year 2022, the company's profit-after-tax (PAT) grew by 365% while the Group's PAT grew by 849% (Royal Ceramics PLC 2021).

A detailed breakdown of the subsidiaries and associate companies of Royal Ceramics PLC is given in Appendix D (bullet point 6).

B. Lanka Tiles PLC and Lanka Walltiles PLC

Lanka Tiles PLC and Lanka Walltiles PLC were incorporated in 1984 and 1975, respectively. The former commenced operations with ceramic glazed floor tiles as its core business and currently manufactures floor tiles and mosaics. The latter commenced operations as an export-oriented joint venture with Japanese partners specializing in wall tiles. It is the pioneer of glazed ceramic tiles in the country and held a dominant position in that market for close to four decades. The products of both these companies are marketed under the flagship "Lanka Tiles" brand and are targeted at the high- and middle-income segments. As such, there is a wide range of products offered to appeal to the more price-conscious consumer.

In 2013, Royal Ceramics PLC acquired a controlling interest of 73.56% in Lanka Ceramics PLC, the parent company of Lanka Tiles and Lanka Walltiles. This acquisition occurred at a time when Lanka Ceramics was Royal Ceramics' strongest competitor, with a stronghold over the wall tile segment while Royal Ceramics dominated the floor tile market (Royal Ceramics PLC 2013). This acquisition allowed Royal Ceramics to dominate both the floor and wall tile markets. The acquisition is explored in more detail in Box 4.

C. Macksons Tiles Lanka (Pvt) Ltd

Macksons Tiles Lanka (Pvt) Ltd commenced production in 2006 and is the most recent entrant into the market. It is the only domestic player not listed on the Colombo Stock Exchange (CSE). Until 2021, its products were solely targeted towards the mass market and were on average less costly than its competitors. While the company has maintained this product range, it has also entered the high-income segment through its premium line of products.

Box 4: Royal Ceramics PLC's Acquisition of Lanka Ceramics PLC

Royal Ceramics' acquisition of of Lanka Ceramics through a 77% stake in May 2013 changed the landscape of the local tile market,[31] and was the largest business acquisition in the local surfacing industry (Royal Ceramics PLC 2013).[32] At the time of this acquisition, Lanka Ceramics was the second largest domestic manufacturer and Royal Ceramics' direct competitor.

Lanka Ceramics PLC commenced as Ceylon Ceramics in 1955 and was renamed Ceylon Ceramics Corporation in 1958. The corporation was established under the State Industrial Corporation Act of 1957. In January 1990, the ceramics section of the corporation was commercialized, and in 1991 it was incorporated as Lanka Ceramics (Ceylon Ceramics Corporation 2017). In 1999, it was acquired by CT Holdings PLC (CT Holdings 2012), one of the largest conglomerates in Sri Lanka, which retained ownership until it was sold to Royal Ceramics PLC (Royal Ceramics PLC 2013).

During the year of acquisition, Lanka Ceramics completely transitioned out of the retailing of tile products to engaging in the mining and processing of raw materials like kaolin, feldspar, and ball clay, which are all integral to the production of tiles. With this transition, the company became the largest supplier of raw materials for tile manufacturing by 2014 (Royal Ceramics PLC 2014).

Further, at the time of this acquisition, Lanka Ceramics held a 62% stake in the Lanka Walltiles Group which had 7 subsidiaries including Lanka Tiles, UniDil Packaging, and Swisstek Ceylon. By 2012-13, Royal Ceramics was the market leader for ceramic floor tiles with a market share of 40%. Post acquisition, this market share increased to 60% and it also received 55% of the wall tile market, making it the primary player in both markets. The acquisition caused an immediate increase in revenue by 160%. This increase is reflected in Figure 14.

1.3 Integration along the industry value chain

Unlike the other two industries analyzed in this study, the tile industry's value chain has significant backward and forward integration. While all players engage in forward integration, the Royal Ceramics Group has been successful in backward integration. The operation of the value chain and instances of integration are explained in detail in Figure 14.

[31] *The reported figure is based on the Royal Ceramics PLC Annual Report for 2013-2014. However, the Lanka Ceramics PLC Annual Report for the same period reports this figure as an 80% stake.*

[32] *The term "surfacing" originates from "surfacing material" which is described as "material that is sprayed-on, troweled-on, or otherwise applied to surfaces including, but not limited to, acoustical plaster on ceilings, paints, fireproofing material on structural members, or other material on surfaces for decorative purposes" (Benton Clean Air Agency, 2021).*

Figure 14: Tile industry: integration along the value chain

Integration along the industry value chain for tiles

Sourcing inputs

Evidence of integration:

- Lanka Ceramics PLC (73.56% owned by Royal Ceramics PLC) - supplies feldspar to the Group
- Uni-Dil Packaging (100% owned by Lanka Walltiles PLC) - supplies tiles packaging for the Group

The key minerals for the tile body include ball clay, feldspar, kaolin, dolomite, calcite and silica sand- all of which can be sourced locally.

Glaze coating and ink for digital printers are fully imported from Europe and China.

Production Process

Two days worth of raw materials and buffer stocks of 4-6 months are kept in the factory.

The factories are operational 24/7, except once a year when the kilns are shut down for two weeks for maintenance.

Distribution Networks

Evidence of integration: The Royal Ceramics Group and Macktiles own their distribution networks.

Domestic manufacturers and importers use a hybrid model- they own their retail network of showrooms and factory outlets and use third party distributors such as dealers.

If the distributors are franchised dealers, they have exclusive arrangements with a single tile company to display only their brand.

End Consumer

Evidence of integration: Swisstek (Ceylon) PLC (47.80% owned by Lanka Tiles PLC) - manufacturing and marketing grout and mortar

The end consumers can be broadly categorized as residential and non-residential. The residential sector, i.e. individuals owning houses or apartments, will make a choice based on functionality, aesthetic and economics

Source: JB Securities (2021)

1.4 Import market

Prior to the import suspension in April 2020, Sri Lanka had a thriving import market for tiles. Tiles were imported mainly from China, India, and Italy. Much of the domestic demand was met through imports, given their greater choice in size, design, availability, perceived superior quality, and the larger price range per square foot, compared to domestically produced tiles. The wide price range per square foot makes certain imported tiles a viable alternative for domestically produced tiles, particularly to the low-income segment whose consumption decisions are primarily affected by price.

As importers are not engaged in the actual production process, they have the flexibility to adapt swiftly to accommodate changes in consumer demand. Depending on consumer taste and preference, tile importers place orders from different overseas manufacturers. Generally, Italian and Spanish tiles are perceived as having the best quality and are exclusively marketed to the affluent and luxury market segment. Indian and Chinese tiles are perceived as being of lower quality by comparison, making them more accessible to the low-, middle- and upper-income segments. Domestic manufacturers are at a disadvantage as they are unable to deliver new designs to the market at the same speed as importers, due to production constraints and availability of inputs such as ink.

Tiles are not a homogenous product and are subject to changes in demand due to consumer preference.[33] Therefore, for this study, two products which dominated the market (although at different points in time) were tracked.[34] Figure 15 shows the quantity of imports of these selected tiles for the period 2013-2022[35]. The sharp reduction observed in 2020 and after is the result of the import restrictions imposed in April 2020.

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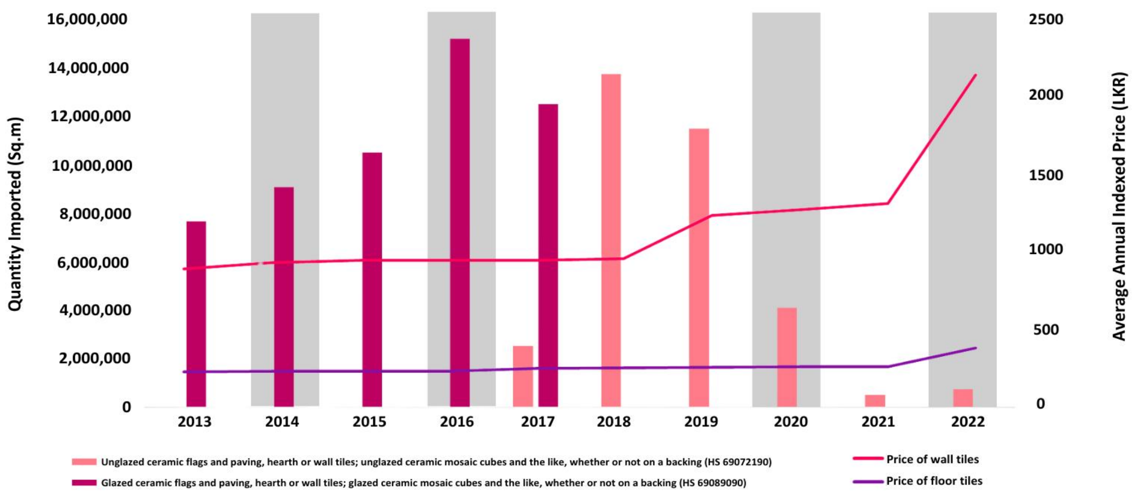
[33] The trends and changes in consumer preferences are reflected in the quantity of tiles imported under each HS code. For example, import of mosaic tiles and other related products (HS code 690730) commenced from 2017 with the importation of 208 square meters, which gradually increased to 19,901 square meters by 2020, reflecting the growth in demand for mosaic tiles.

[34] HS code 69089090 (glazed ceramic flags and paving, hearth or wall tiles; glazed ceramic mosaic cubes and the like, whether or not on a backing - other) accounted for the largest quantity of imported tiles during 2013-2017. HS code 69072190 (unglazed ceramic flags and paving, hearth or wall tiles; unglazed ceramic mosaic cubes and the like, whether or not on a backing - of a water absorption coefficient by weight not exceeding 0.5%: other) accounted for the most imported quantity during 2018-2020.

[35] Due to there being no significant quantities reported for HS code 69089090 after 2018, and no data reported for HS code 69072190 prior to 2018, it should be noted that the changes in import quantities and changes in tariffs for tiles could not be examined over a continuous period of 10 consecutive years (as in the case of cement and aluminum sectors). Instead, these changes were examined across two periods: HS code 69089090 for the period 2013-2017 and HS code 69072190 for the period 2018-2022.

Figure 15: Changes in quantity of tile imported, prices, and tariff structures



*The background has been highlighted in grey for the years in which the tariff structure was revised.

Sources: Bulletin of Construction Statistics 2011-2022, Construction Industry Development Authority; Import Data 2010-2021, Department of Customs; and Gazettes published by the Department of Customs.

In 2014, total tariffs, taxes, and para-tariffs were reduced from 84% to 79% and these reductions were followed by an increase in imports. However, the reduction in taxes was not reflected in prices, which rose by 1.8% and 4.4% for floor and wall tiles respectively.[36] Imports peaked in 2016, despite a tax increase of 10.5%. This increase in imports reflects an instance of potential stockpiling prior to an expected tax increase, which explains why prices did not reflect this tax increase as the price of floor and wall tiles remained unchanged until December 2016 and March 2018 respectively.

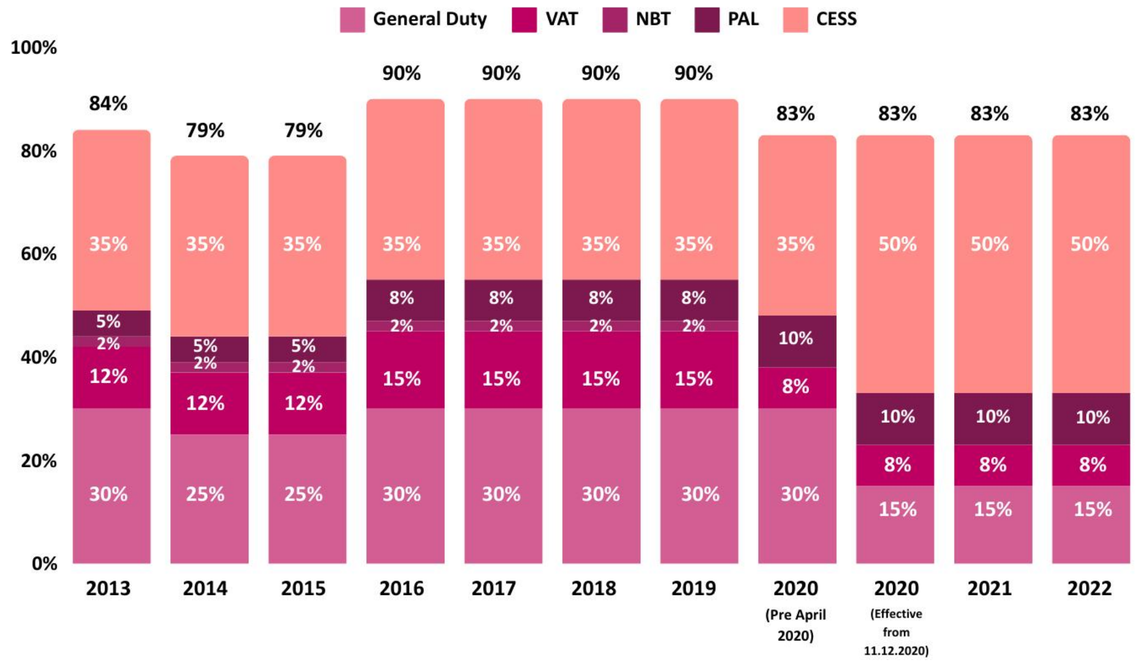
With the restrictions on imports from April 2020, there was a significant decline in quantities imported in 2020 and 2021. Domestic tile manufacturers did not have spare capacity in place to immediately scale up production to address the shortage. Hence, they were able to cater to around 56% of total demand (JB Securities 2021). This limited supply was not immediately reflected in price but rather in quantity. Both consumers and retailers reported significant difficulty in purchasing tiles due to insufficient stocks and lead times of 6 months to over a year from the date of the purchase order. However, prices remained unchanged from the time import restrictions were imposed until August 2021 and February of 2022, for wall and floor respectively. By contrast, Figure 15 indicates an immediate drop in quantity in 2020, aligning with the complaints raised by customers and retailers. However, by August 2022, prices for floor and wall tiles increased exponentially by 93% and 123%, respectively compared to prices in April 2020 (Construction Industry Development Authority 2023).

However, even prior to the import suspension, the tile industry was subject to high tariff protection. The composition of taxes is shown in Figure 16[37].

[36] *Average annual prices*

[37] *See footnote 35*

Figure 16: Changes to the tile tariff structure over the years



Source: Department of Customs

In 2013, general custom duties accounted for the majority of taxes. However, between 2015 and 2016, there was a significant increase in total tariffs by 10% and CESS became the largest component in the total tax structure. Since then, the share of CESS has progressively increased. This tax was initially introduced with the intention of taxing imports to subsidize exports (JB Securities 2021). However, at present it is being used as a selective protective instrument.

By contrast, domestic manufacturers importing raw materials had to only pay a VAT of 8%. With the introduction of the Industrial Protection Act of 1949, protectionist measures were implemented to safeguard the local ceramic industry which only commenced in 1939 (JB Securities 2021). However, several decades later, this industry continues to be protected from foreign competition. The significant gap between the total tariff rate on raw materials compared to finished products has created an uneven playing field.

This issue is further exacerbated by the categorization of tiles under the FTAs. In the Indo-Sri Lanka Free Trade Agreement (ISFTA) and the Pakistan-Sri Lanka Free Trade Agreement (PSFTA), tiles are included in the negative list. Hence, tile importers are not eligible for the preferential tariffs available to other industries under these trade agreements. The implication of this exclusion is that tile imports are subject to total taxes of over 80% when importing from any country, and are prevented from benefiting from preferential taxes even from countries with FTAs.

In addition to tariff barriers, tile importers also face non-tariff barriers relating to quality checks. They must comply with Sri Lanka Standard Institute (SLSI) regulations and must conform to SLS 1181 specifications, subject to a mandatory quality inspection. Any tile not meeting these standards, are resent to the manufacturer at cost to the importer. While domestic manufacturers have complained of low-quality imported tiles entering the market, importers point to the rigorous quality checks their products must satisfy to clear the Department of Customs warehouses.

Currently, tile imports are allowed for BOI-approved projects at the prevailing tariff structure. However, the rest of the import market continues to be under the temporary import suspension. The government allowed a few importers to import tiles through the Building Material Corporation (BMC), a government-owned supplier of building materials with 16 external branches. These products were stored at BMC warehouses and could only be sold through their outlets. These imports were targeted at the final consumer, the home builder, and not retailers. As such, anyone interested in purchasing these imported tiles through the BMC had to provide evidence of a house plan certified by an architect as well as a *Grama Niladhari* certification, proving that a residential property was in fact being constructed and the tiles obtained would be used for that property only. This arrangement did not prove successful as importers reported inefficiencies in obtaining clearance from customs, and issues in selling the stock.

Overall, the low threat of substitutes and potential entrants as well as their strong bargaining power with suppliers and customers increases the profitability of domestic manufacturers. Their market position is bolstered by the distribution networks and the tariff protection provided by the government. The distribution networks of domestic manufacturers follow a hybrid model; a combination of companies' own retail networks, and third-party distributors. The former allows the companies to directly deal with customers and build brand loyalty while third-party dealers allow for a wider reach at low cost. This multi-pronged approach acts as a deterrent to new entrants who may not have as widespread a reach as incumbent firms to market their products to customers.

The result of these high tariff and non-tariff barriers is the protection of domestic manufacturers from external competition. This lack of competition and resulting loss of choice, as well as the ability to increase prices, has adversely affected consumers. Prices increased in the range of 93-123% by August 2022 compared to April 2020, making an already aspirational product unaffordable to low-income households. Prior to the import restrictions, the wide range of imported tiles, especially from India and China, at varying price levels, provided a more cost-effective alternative for households. As in the case of the other input markets analyzed in this study, the impact of these trade policies are disproportionately borne by low-income households.

4.1.3. Aluminum Industry

1.1 Manufacturing process

Aluminum is a highly sustainable input compared to traditional building materials, as it possesses the property of infinite recyclability and therefore can be recycled without any loss to its inherent property. This positions aluminum as an eco-friendly alternative to the use of timber. Timber, a non-renewable resource, is subject to continuous price increases due to its scarcity and licensing and regulatory compliance requirements. By contrast, the recyclability of aluminum; its lightweight nature; availability in a variety of finishes and colors; relatively easier installation process; and easy maintenance has prompted consumer demand to shift towards aluminum as an alternative for timber. An overview of the global aluminum can be found in Appendix D (bullet point 7). A detailed breakdown of the manufacturing process is given in Figure 17.

Figure 17: Manufacturing process of aluminum extrusion

1.2.Structure of the local market

The domestic market for aluminum comprises players of different size and scale. Like the cement market, there is a direct correlation between the size of the player and the stage at which they enter the value chain. Hence, these suppliers can be broadly categorized into three groups (Table 5).

<table>
<tr><th>Supplier Group</th><th>Stage at which they enter the value chain</th><th>Market share</th><th>Size/scale</th></tr>
<tr><td>Domestic manufacturers</td><td>Stage 1: Import the aluminum billets and other inputs required for manufacturing extrusions.</td><td>80% (Alumex PLC 2021)</td><td>Largest players with significant capital investments in land, manufacturing plants, specialized equipment, vehicle fleets, etc.</td></tr>
<tr><td>Large scale contractors</td><td>Import the final product, architectural extrusion profiles, for BOI projects.</td><td rowspan="2">20%</td><td>Second largest players who do not actively participate in the production process. They require significantly less capital investment.</td></tr>
<tr><td>Small scale importers</td><td>Import the final product, general aluminum items, to cater to the lower end of the hardware market.</td><td>Smallest players who incur the lowest capital investment. Most suppliers fall into this category.</td></tr>
</table>

Table 5: Categorization of aluminum suppliers

Sources: Information obtained from key informant interviews.

For this study, both large-scale contractors and small-scale importers will be referred to collectively as importers.

The demand for aluminum products comes from both residential and commercial construction sectors but is dominated by the latter. Commercial construction uses aluminum extrusions extensively for interior and exterior walls, cladding, windows, doors etc. However, timber is still used more in residential housing.

1.3 Overview of domestic manufacturers and local demand

The four domestic manufacturers control nearly 80% of market share, making it effectively an oligopoly.[38] It is important to note that none of these manufacturers engage in the production of aluminum. Instead, finished aluminum billets are imported and converted into extrusions.

Table 6: Domestic Aluminum Manufacturers and Ownership Structure

Company	Owners	Subsidiaries
Alumex PLC	Hayleys PLC	Alco Industries (Pvt) Ltd
Swisstek Aluminium Ltd	Swisstek (Ceylon) PLC [part of Royal Ceramics PLC through the Lanka Walltiles Group]	Swisstek Aluminium Ltd Swisstek Development (Pvt) Ltd.
Lanka Aluminium Industries PLC	Clovis Company Limited (Bermuda)	Comark Lanka (Pvt) Ltd Castalloys (Pvt) Ltd Comark Engineers (Pvt) Ltd
Hemnette Aluminium Extrusion Co. (PVT) Ltd	A private limited company	Information not available

1. Alumex PLC

Alumex PLC is the largest manufacturer and exporter of extrusions in the country, holding roughly 50% of domestic market share. The company has three brands, each targeting a specific income bracket, through market segmentation. They are:

a. Alumex: This flagship range targets the mainstream market and comprises low-end generic products. This range has the largest demand and is the company's biggest source of revenue.

b. LUMIN: This high-end range targets residential and condominium housing markets.

c. Alco: This brand represents the latest range of products and is priced predominantly in the mid-range with certain products falling into the low-range.

Alumex PLC has an annual manufacturing capacity of 22,000 MT with capacity utilization between 36-40% in 2021/2022.[39] The company has been operating below capacity for many years, prompting

[38] There is a discrepancy in the figure reported for the total market share held by all four domestic manufacturers between the Alumex PLC Annual Report and the annual reports of the individual companies. The figure reported by Alumex PLC, that domestic manufacturers collectively hold 80% of the market share, has been quoted here. However, according to the latest annual reports of individual companies, Alumex PLC controls 50% of the market share, Swisstek Aluminium over 40%, and Lanka Aluminium Industries, 10%. This makes their collective holding over 100% of the local market.

[39] Alumex doubled their capacity in 2018, which halved capacity utilization from 70% to 35%. The capacity was doubled with the expectation of considerable growth in domestic demand and export markets. However, domestic demand did not pick up to the levels forecasted in 2018.

expansion into the export market in 2019-2020.[40] However, a major share of its operations is concentrated in the domestic market, which accounts for 84% of total annual revenue in 2021-2022, with the Alumex brand accounting for the major proportion.

Alumex PLC has licensing rights to manufacture the top seven global proprietary systems.[41] It is also the only manufacturer in South Asia with this right, giving them a significant advantage in marketing, product placement, and product portfolio.

2. Swisstek Aluminium Ltd.

This firm is the second largest in the commercial and industrial aluminum extrusion manufacturing space with a market share of around 30%.[42] Swisstex manufactures a range of products, including prefabricated windows for residential and architectural requirements. The company has a production capacity of 8,400 MT per annum with a capacity utilization rate of 36-40%.

The company maintains one showroom and two warehouses exclusively for the distribution of Swisstek aluminum. However, as part of the Royal Ceramics Group, it benefits from an island-wide distribution network through the Lanka Tiles, Lanka Walltiles, and Royal Ceramics distribution channels.

3. Lanka Aluminium Industries PLC

The company specializes in the manufacturing of anodized, power-coated and mill-finished extrusions for architectural, hardware, transport and specialist applications, and has the third highest market share. It was the first manufacturer to receive SLS certification.

4. Hemnette Aluminium Extrusion Co. (PVT) Ltd

The company holds the smallest market share of all domestic manufacturers and is the only company of the four not listed on the CSE. Its products are marketed under the brand name Hemalco, and cater to a wide range of engineering industrial applications from architecture and fabrication to solar panel mounting.

All four domestic manufacturers import aluminum billets from the Middle East. The price of the metal is determined on the London Metal Exchange (LME) and is subject to fluctuation, the financial effects of which are compounded by the volatile exchange rate. Hence, most companies, especially the two largest manufacturers, have switched to a combination of importing billets and recycling aluminum scrap to meet their raw material needs.[43]

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[40] *The initial export quantity stood at 43 MT in the first year but expanded thirty-fold to 1,291 MT by 2021-2022 with a presence in over 13 countries.*

[41] *These systems and technology are technical innovations that are unique and legally owned or licensed by a business and include, without limitation, those innovations that are patented, patent pending, a subject of trade secrets, or copyrighted (Law Insider n.d.).*

[42] *In their 2021-2022 Annual Report, Swisstek Aluminium states that they hold the market leader position with over 40% market share. However, in all other publications, published by the companies and independent sources, Alumex PLC is reported to be the market leader. This study assumes Alumex PLC to be the market leader.*

[43] *In 2021-2022, this combination made up 50% of the raw material mix for Alumex PLC. This process is both eco-friendly and cost-effective as recycling only takes 5% of the energy required to produce new aluminum.*

1.4 Import Market

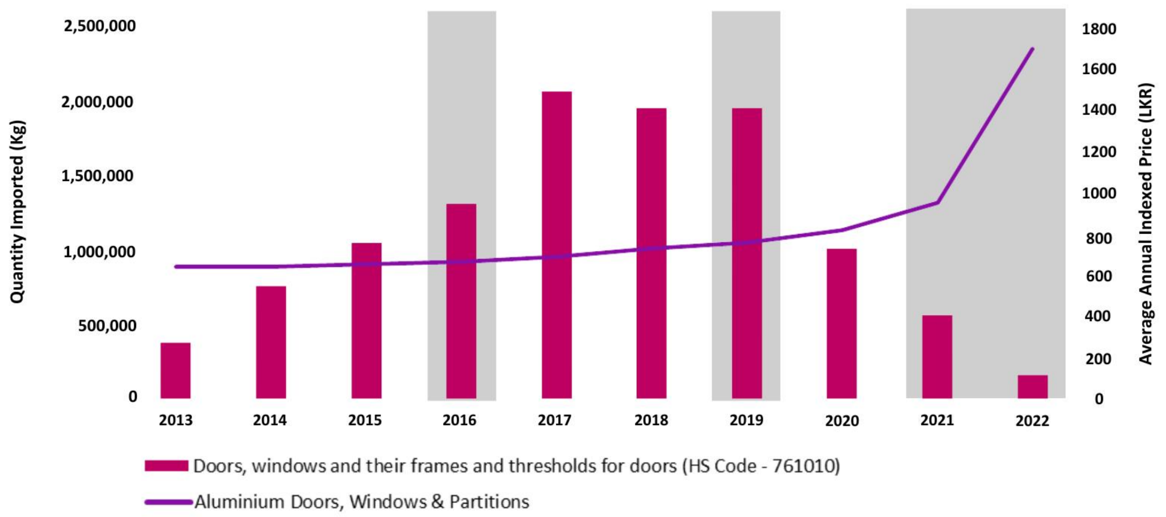
The aluminum product chosen in this analysis was a product with one of the highest volumes imported, based on the availability of price index data. The product used is the HS code 761010, which includes aluminum doors, windows, and their frames and thresholds for doors.

The import of finished aluminum has been charged at a higher rate of general duty, as it consistently accounts for the largest share of total taxes. Further, aluminum is not on the negative list under either the Indo-Sri Lanka Free Trade Agreement (ISFTA) or the Pakistan-Sri Lanka Free Trade Agreement (PSFTA) indicating that preferential tariffs apply. Due to these factors, domestic manufacturers complain of facing tough price competition from imports. Hence, during discussions with China for an FTA between the two countries, domestic manufacturers recommended that aluminum imports be included in the negative list of the trade agreement.

Like domestic manufacturers of cement, aluminum manufacturers have alleged dumping of low-quality imports into the local market. However, in addition to the Anti-dumping and Countervailing Duties Act, No. 2 of 2018, CIDA introduced standards for aluminum imports during the financial year 2017-2018.

Figure 18 maps out the annual quantities imported for the identified HS code and the changes in price of the selected aluminum product in the domestic market together with changes to the tariff structure.[44]

Figure 18: Changes to quantity of aluminum imported, prices, and tariff structures



*The background has been highlighted for the years in which the tariff structure was changed.

Sources: Bulletin of Construction Statistics 2011-2022, Construction Industry Development Authority; Import Data 2010-2022, Department of Customs; and Gazettes published by the Department of Customs.

[44] *The changes to tariffs during the period analyzed have consistently been upward revisions except for 2019. With the change in government in 2019, sweeping reductions were made to taxes, including reducing VAT and abolishing NBT.*

As Figure 18 shows, over the period 2013-2022, there were multiple tariff revisions on the selected aluminum product for this analysis. The average effective tax rate for the finished aluminum product remained consistently above 25% throughout the period, signifying a high percentage. This elevated effective tax rate can be attributed to the duty structure of the products. For instance, the selected aluminum product has an approximate total tariff rate of 60% over the given timeframe.

The above figure also shows a significant decrease in import quantity after 2019, despite the reduction of VAT to 8% and the abolition of NBT. The reduction in quantity could be explained by the effects of prices, as there wasan 8% increase in price in 2022, followed by a continuous upward trend. It can be observed that there was a drastic drop in the quantity imported in 2022. This can also be attributed to the rupee depreciation as well as a temporary suspension imposed by the Sri Lankan government that year. Hence, the price index has also increased by 78% in 2022 compared to 2021

Increased tariffs and restrictions on imports, as observed in the aluminum industry, affect consumers through higher prices, lack of availability of materials as well as limited choice. These impacts are disproportionately felt by lower-income groups. While timber has been a more widely used material for ceilings, doors, windows and other finishings, it is on average more expensive than aluminum. Hence, the high tariff structures and trade policies on aluminum products, makes the more cost-effective alternative to timber less affordable for low-income households.

4.2. Specific anti-competitive practices in Sri Lanka's construction and housing industries

This section discusses the nature and scope of anti-competitive practices based on the interviews with key informants conducted for this study (see Appendix E). The most notable outcome of the KIIs was that, while many of the interviewees alluded to anti-competitive practices, only a few of them were able to point out anything specific. When questioned, many of the interviewees stated that the structures of the tile, cement and aluminum industries were either oligopolies or duopolies, but were not able to provide much information regarding the conduct of firms in these industries. As such, the KIIs produced only two allegations of anti-competitive practices and one instance of misleading advertising, as will be detailed later in this section. It should be noted that the accuracy of these findings are restricted by the limitations set out in Section 2 of this report.

<u>KII findings regarding market structures</u>

The KIIs were used as a starting point for the sector reviews set out in Section 4.1. While the findings from the KIIs were accurate for the most part, certain gaps, such as the misnaming of firms or the failure to mention firms that may not be as well-known as their more popular rivals, were observed.

The aluminum market, with four players, is concentrated. According to the interviewees, the three largest firms in the aluminum industry are Alumex, Swisstek and Lanka Aluminium. Taken as a whole, this market appears oligopolistic. However, Alumex and Swisstek are owned by the same individual. This fact appears to be common knowledge, at least amongst the interviewees. The cross-ownership structure between these two firms is explained later in this section (see Figure 13).The interviewees were not aware of the existence of a fourth player, Hemnette Aluminium, and assumed that the aluminum market was a duopoly.

With regard to the tile industry, the general consensus amongst interviewees was that there are four large players, Lanka Tiles, Lanka Walltiles, Rocell (the brand name used by Royal Ceramics PLC) and Macktiles. Since Lanka Tiles and Lanka Walltiles market their products under the same brand, they are often lumped together. Although all four tile firms are in the same industry, the perception was that they do not directly compete as they target different market segments. Macktiles operates in the value-for-money segment, Lanka Tiles caters to middle-income groups, and Rocell targets the high-income segment.

Prior to the import suspension, importers used to make up 50% of the market, catering mostly to the low-income and middle-income segments. Currently, the market only consists of domestic manufacturers, resulting in the tile market appearing oligopolistic. However, given that Royal Ceramics took over Lanka Tiles and Lanka Wall Tiles in 2013, by taking over its parent company, Lanka Ceramics, this market is effectively a duopoly (refer Box 5).

Most of the interviewees agreed that the structure of the cement market was either oligopolistic or duopolistic, although they were not all in agreement with regard to the identity of these big players. The names that were mentioned most commonly by the interviewees were Tokyo Cement and Holcim, which is now known as Insee Cement.

Cross-ownership in the tile and aluminum industries

As discussed in the previous section, there is significant cross-ownership in the aluminum and tile industries (refer Figure 14). As such, the markets are even more concentrated than they initially appear. Royal Ceramics has significant stakes in Lanka Tiles and Lanka Walltiles, and Lanka Tiles is a majority shareholder of Swisstek. It is also important to note that the two companies that have controlling shares in Royal Ceramics and Alumex, Vallibel One PLC and Hayleys respectively, are owned by the same party. The very existence of these cross directorates undermines competition. For instance, since domestic tile manufacturers such as Royal Ceramics and Lanka Tiles have a vast island-wide distribution network consisting of their own showrooms and third-party distributors, Swisstek benefits from these distribution channels due to the cross-ownership. They are therefore able to operate with only one showroom and two warehouses of their own. More significantly, supposed competitors that are housed in the same corporate structure have less incentive to compete against each other.

Both the high startup costs required to operate in these industries, and the extensive distribution channels that domestic manufacturers currently have access to, suggest that barriers to entry are high. As a result, the threat of potential entrants is low. The existence of cross ownership between these domestic players and the protection they receive via the government's inconsistent tariff policies (see Sections 3.5 and 4.1), increases the bargaining power of manufacturers. In sum, all these factors facilitate the anti-competitive practices highlighted in the next few paragraphs.

Anti-competitive behavior

Tied selling

The KII findings revealed that a major domestic tile manufacturer engages in the practice of tied sales. Tied selling is an anti-competitive practice that occurs when a firm refuses to sell a product to a consumer unless they buy another good or service. The firm in question bundles its tile sales to hardware stores, with either its signature bathroom set or with tile adhesive that is produced by a leading aluminum manufacturer. As mentioned in section 4.1, this tile manufacturer has a controlling stake in the aluminum firm (refer Figure 14). Moreover, given that it holds 43% of the tile market share (refer Table 6), this practice is an indication of abuse of dominance. There is no evidence that the other two tile manufacturers engage in this type of anti-competitive behavior.

Exclusive dealing

It was also discovered that three of the largest aluminum manufacturers practice exclusive dealing where they prohibit retailers from stocking rival products. Since these three players hold close to 80% of the market, this action can be classified as an abuse of dominance (see Section 4.1.2). The fact that two of these firms are owned by the same party compounds the anti-competitive impact of this practice.

Notably, the KIIs did not reveal any anti-competitive conduct in the cement market, apart from some vague allegations.[45]

Based on the interviews, many people appear to mistake corruption for anti-competitive practices. Since several interviewees also stated that crony capitalism played a key role in the dynamics of these input industries, it is possible that this is what they were alluding to. While corruption does not necessarily imply that firms are anti-competitive, it is a strong indicator that the market does not operate as freely and efficiently as it should. It also provides an ideal environment in which anti-competitive practices take place.

Box 5: Corruption in Construction and Housing

Throughout the KIIs, numerous allegations of corruption were referenced. There were allegations of corruption taking place when the relocation programs referred to in Section 3.2 were in progress. Specifically, these allegations surrounded the process of allocating apartments for those being relocated, with certain individuals receiving preferential treatment. Another interviewee stated however, that the scope for corruption in affordable housing is less because of the low profit margins in the sector.

[45] *In one instance of such allegations, an interviewee stated that two major cement manufacturers engage in collusion and price fixing but did not provide any evidence to support this claim.*

Misleading advertising

Another issue that was brought to light through the KIIs was consistent failure on the part of a leading tile manufacturer to supply its goods on time, with deliveries sometimes taking almost a year. Customers were then made to pay the price at the date of delivery, rather than at the date of sale, which was much higher than what they initially planned to pay. While this practice is not an anti-competitive one, it is false advertising. According to one of the interviewees, the reason for this delay was that employees in this firm were selling tiles through the black market.

The shortcomings of the Consumer Affairs Authority

The extent to which the aforementioned anti-competitive practices affect affordability depends in part on the ability of CAA to regulate the industries in which they occur and penalize those firms responsible. However, as reflected by the KIIs, CAA is not able to do this task effectively due to several factors, which are described below.

1) Lack of public awareness about the Consumer Affairs Authority

As mentioned in the section on anti-competitive behavior, there appears to be some confusion regarding what constitutes an anti-competitive practice even amongst industry professionals. When interviewees were asked for examples of possible anti-competitive practices, instances of corruption were cited instead. The lack of awareness of anti-competitive practices extends to the public, with this issue being raised in at least three interviews. According to key informant 16, “the lack of awareness in this area has led to a lesser number of complaints than there would have been if people had more knowledge” of anti-competitive practices. Although attempts to raise awareness, such as conducting public awareness campaigns, have been made by CAA, the impact of such attempts has been limited.

2) Lack of trust in the Consumer Affairs Authority

Firms and individuals may also be reluctant to take their complaints to CAA, for a number of other reasons. The organization itself impedes those who wish to file complaints. One interviewee, key informant 18, even stated that “people who go to CAA are told by staff that filing an inquiry might not be successful or might take too long, and this discourages them from proceeding with their complaints”. A lack of confidence in CAA’s ability to properly investigate complaints has also resulted in people preferring to take their concerns directly to court. In the case of hardware stores, most of the owners stated that they are hesitant to file cases with CAA. This reluctance is partly due to the fear of retribution from larger players in their industry, and also because they believe that their concerns will be ignored. Some of them suggested that they would be willing to take their grievances to CAA as part of an association rather than make their complaints individually.

3) CAA’s capacity limitations

Discussions with competition experts and those who work at CAA revealed that, while there are certain shortcomings in the law such as the omission of mergers and takeovers, these limitations do not pose much of an issue. This view was held, because historically, Sri Lanka does not have a history of mergers and takeovers, although that may change in the future. According to the KIIs, a new amendment to the CAA Act is in the works and will possibly include a section on mergers, although the planning process is still ongoing. Apart from this shortcoming, the CAA Act was perceived to be quite robust. As one individual, key informant 13, put it, “the Act itself is strong, it is just that CAA fails when it comes to the implementation of the law.”

This failure is partly because competent lawyers are required to use the law effectively and prosecute those who engage in anti-competitive practices. However, according to key informants 14 and 15, “there aren’t many people who are qualified/have experience in this area“, and CAA finds it difficult to “attract good people because the pay isn’t very good”, the agency is unable to meet these requirements. As discussed in Section 3.4, CAA has no cases filed regarding anti-competitive practices between 2010 and 2020, and instead pursues cases related to price control, product labeling and other consumer protection issues.

4) Lack of independence

CAA’s failure to achieve its mandate to redress anti-competitive practices stems from a lack of independence. The agency reports to a line minister and not to a parliamentary body. Rent-seeking is not uncommon either, and is cited as the reason why, when CAA raided a large retailer a few years back, its rivals managed to avoid the same fate. The KIIs also revealed another instance of how political connections interfered with the workings of CAA, when a firm publicly stated that they were colluding with their biggest competitor and yet, CAA was unable to follow up on it.

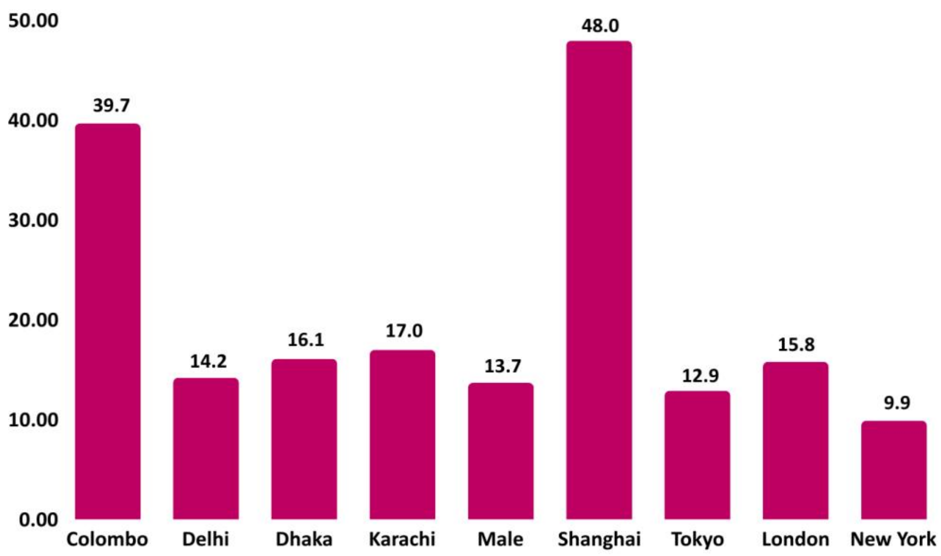
The Act provides safeguards for CAA management that work independently, by ensuring that, once appointed by the minister, they cannot be forced to leave until three years after their appointment. However, the management and staff of CAA are underpaid and may be susceptible to rent-seeking behavior.

5. Impact of Anti-competitive Practices on Availability and Affordability of Urban Housing

5.1 Introduction

The consequences of the anti-competitive practices discussed in Section 4 could have economy wide effects. Lack of affordable housing is one such effect which needs to be investigated further for an in-depth understanding of the issue. A comparison of the Numbeo Property Price Index,[46,47] across cities in selected countries finds that the property price-to-income ratio in Colombo is higher than in other South Asian cities. However, this index uses a simple methodology to assess housing affordability. In this study the concept of lifetime earnings is used to develop a Housing Affordability Index (HAI) for Sri Lanka.

Figure 19: Price-to-income ratio for selected cities, 2022



Source: (Numbeo, n.d.)

[46] *Price-to-income ratio is the basic measure for apartment purchase affordability (with a lower ratio being better). It is generally calculated as the ratio of median apartment prices to median familial disposable income, expressed as years of income (although variations are also used elsewhere).*

[47] *https://www.numbeo.com/cost-of-living/calculator.jsp*

5.2 Methodology

Various quantitative measures are to measure affordability and housing markets are no exception. Importantly, house prices can be represented by the discounted present value of future mortgage payments, which is why it is important to compare house price with a measure of lifetime income. A house is typically purchased using a mortgage, which has an interest cost. Even if one uses personal savings to buy a house or make a down payment, there is a cost in terms of lost interest earnings. Therefore, using current income (Y_t) may produce an inaccurate picture of affordability, depending on which income level on the age-income distribution is chosen (Quigley and Raphael 2004). To address this issue, previous studies have used permanent income of households by averaging it over the entire income distribution rather than focusing solely on the median house price and median income (Gan and Hill 2009).

Similarly, another method that has been used is calculating lifetime income from observed household income by age (Moffitt 1982; Abeysinghe and Gu 2010). Moffitt's method is more promising than estimating lifetime income assuming constant income growth rates (Miron 1984). Based on the limited data available, we followed the second method to calculate aggregate measures of lifetime income for households.

The estimates for lifetime income for Sri Lanka are based on the Household Income Expenditure Survey (HIES), which is conducted by the Department of Census and Statistics of Sri Lanka every three years. This analysis uses survey data for 2002, 2005, 2007, 2009, 2012, 2016, and 2019. Further, the study uses the income of individuals classified under 14 age groups with three-year intervals from 19 to 60 years. For the simplicity of the study, the midpoint of each age interval was considered for analysis. For example, if the age of a particular individual is 19 years, she would be under the 19-21 years of age group and would be considered 20 years old (the mid-year of the age group) for the purpose of the study. Further, to estimate the HAI for different income levels, we estimated the income of each age category at all the income deciles and quantiles.

To estimate lifetime income, a panel dataset with the income record of each household tracked over the years is needed. Unfortunately, such information is not available. Hence for this study, data from a pseudo-panel is used (Deaton 1985). Each cross-sectional survey in a pseudo-panel may include a different set of randomly selected households for the survey. As a result, although it is not possible to follow the same household over time, income profiles of birth cohorts can be tracked. Unfortunately, the limited data available does not provide a complete income profile for each birth cohort from age 20 to 60 (for more details see Annex F). To address this issue, we used the following regression equation (1) to generate the complete income profiles from ages 19-60 for each cohort in our sample after arranging the available data in an unbalanced panel format.

$$\log Y_{it} = \mu + \alpha_1 AGE_i + \alpha_1 AGE_i^2 + \beta' x_t + \sum \gamma_t Cohort_j + \varepsilon_{it} \qquad (1)$$

where i = 1, 2..., A is the i^{th} age; t = 1, 2..., T is the t^{th} year; and j = 1, 2..., J is the j^{th} cohort; j = A-i+t and J = A+T-1 in a balanced dataset. Furthermore, x is a variable vector that captures business cycle effects, and *Cohort* represents cohort dummies.

Lifetime income is estimated after generating a complete income profile for each cohort using the following equation (2).

$$W_a = \sum_{i=a}^{A} \frac{\hat{Y}_i}{(1+r)^{i-a}} + W_{a-1} \tag{2}$$

where, W_a is the wealth at age a for a household in a given cohort; $\hat{Y}_i$ is the estimated (expected) income at age i; and r is the discount rate. To discount future income, we assumed a flat interest rate of 15% based on the average mortgage interest rate in Sri Lanka over the period of the analysis.

On the right side of equation (2), the first term represents the discounted present value (PV) of the expected income stream from age a to A, and the second term the accumulated savings at age a-1, or the initial wealth. The standard recursive formula, shown in equation (3) below, can be used to easily compute the second term.

$$W_{a-1} = (1 + r_{a-2})W_{a-2} + S_{a-1} \tag{3}$$

where S_a is the amount saved and r_a is the interest rate on savings at age a. Because future interest rates are unknown at age a, we use a fixed r when computing the discounted PV in equation (3). Based on the literature, we assume a marginal propensity to save (MPS) of 20% which is constant across all income deciles (Rathnayaka, Selvanathan, and Selvanathan 2019). This assumption simply means that each individual allocates 20% of her income as savings. Further, we assume the interest rate in equation (3) to be 5%, based on the average savings rate in Sri Lanka over the period of the analysis (Rathnayaka, Selvanathan, and Selvanathan 2019).

Given these assumptions, the Housing Affordability Index (HAI) is defined as follows:

$$HAI_{a,t} = \frac{W_{t-a}}{P_t^H} \tag{4}$$

where, W_{t-a} is the lifetime income or wealth (in nominal terms) expressed by the year of birth (t-a); and P_t^H is the average price of the chosen property type in year t. We assumed that the average age of people who consider building a house to be 30 years (Abeysinghe and Gu 2010), which is reasonable in the context of Sri Lanka as the majority of people would think of settling down in their late 20s after a long period of education commitment. Since we have chosen a = 30, $HAI_{30,\ 1980}$, for example, is the housing affordability index for the 30-year age-group in 1980.

5.3 Findings and Discussion

There are a number of points worth mentioning in relation to this index. If a person aged 30 years old purchases a property, her previous earnings before turning thirty years old are included within the index. For first-time home buyers without inherited wealth, these earnings provide the required savings for down payments. Therefore, the index concurrently considers affordability in both the short and long term. Secondly, an increase in the index indicates an improvement in affordability. Thirdly, an index value of 1 implies a household's lifetime income is sufficient to purchase a house of a specified value. Nevertheless, as houses require extra income to maintain living conditions, a value larger than 1 is necessary to prevent the household falling into indebtedness by purchasing properties which are beyond their means. One approach that can be adopted is to calculate the standard non-housing expenditure share of income that is uncorrelated with housing expenditure and use the remaining lifetime income to decide the HAI threshold. HAI = 1 is a natural cut-off point in this instance, with HAI<1 indicating a housing-induced decline in non-housing expenditure.

A common rule-of-thumb is used to specify a cut-off value for HAI. Banks frequently make home loan decisions based on a mortgage instalment-to-income ratio of 35%. Despite the issues, this ratio is used as a rough guide and HAI>2.86 (= 1/0.35) is used as the affordable range. This cut-off value enables comparison of affordability amongst households by assuming either the numerator or denominator of the ratio is kept constant.

Sri Lanka does not have a reliable series of house prices, which is a limitation of this analysis. NHDA and UDA, the two government agencies responsible for government housing schemes, have not kept records of house prices over time as required for this study. A time series of average prices of houses is constructed using the rate of change of increase in the construction cost index for all houses published by CIDA since 1990 and some average house prices as starting values. Two average prices of LKR 2,239,985 in 2012 and LKR 5,185,029 in 2019 as estimated by NHDA and Asia Securities respectively, are used as starting values. Estimates from NHDA are based on the five-storey houses in the *Soysapura* housing scheme for urban low-income earners. Each housing unit of 500 sq ft comprises a living room, two bedrooms, a bathroom, and a pantry. For the estimate from Asia Securities (Majeed and Mendis 2020), the average price in 2019 is based on a housing unit of 1000 sq ft which was mainly for urban middle-income earners.

Appendix G presents the HAI by income deciles and quantiles for low-income housing, assuming an individual starts constructing a house by the age of 30 years and the discount rate is 15%. Figure 20 shows the increase in lifetime income of individuals at the age of 30 years in the different income percentiles. In lower income deciles, the rate of increase in income with respect to the age is relatively lower than in the higher income deciles. Using a cut-off value of 2.86, low-income housing becomes affordable only beyond the 70th income percentile (see Table 16 in Appendix G), while 1000 sq ft units housing become affordable only at the 75th percentile of income.

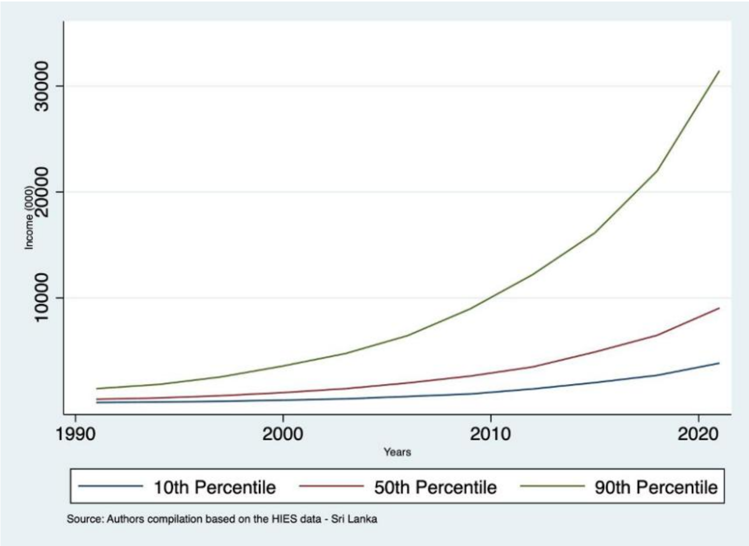
Table 7: Income distribution, 2016

	Share of Total Income (%)	
	Western Province	All island
Richest 20%	51.2	50.8
Poorest 20%	5.3	4.8
Middle 60%	43.4	44.4

Source: Sri Lanka Socio Economic Data - 2021, Central Bank of Sri Lanka

The richest 20% of the population command 50.8% of the total income, while the balance income (49.2%) is distributed among the rest of the 80% of the population. Though we cannot directly compare HAI findings with the above socio-economic data for Sri Lanka, it shows the unfavorable situation of the country in terms of housing affordability. According to our analysis, only people in and above the 70%- and 75%-income deciles can afford a house of 500 sq ft or 1000 sq ft respectively. This finding implies that a majority of individuals cannot afford a basic house even taking lifetime income into account.

Figure 20: Mean lifetime income over income deciles



5.4 Limitations

A marginal propensity to save (MPS) of 20% is assumed over all income deciles and quantiles, which may not be realistic given the MPS at low-income levels could even be negative. As the literature suggests, individuals from lower income deciles have a lower MPS while those at the higher end of the income distribution have relatively higher MPS. Hence, the assumption of a constant MPS across all income deciles is a limitation of the study.

Secondly, the study assumes, based on previous literature, that individuals start constructing or buying a house at the age of 30. This assumption may be questionable given it is hard to observe such uniformity in building or buying a house in the real world.

Thirdly, to discount future income, an approximation of the monthly Average Weighted Lending Rate (AWLR) in Sri Lanka from January 2009 to December 2021 of 14.56% (approximated to 15%) was used in the study. The Average Weighted Deposit Rate (AWPR) over the same period of 5.92% (approximated to 5%) was used as the savings rate.

6. Policy Recommendations

6.1 Competition Law and the Consumer Affairs Authority

Strengthening the competition law regime

The discussion in Sections 4.1 and 4.2 demonstrates that markets for home construction products in Sri Lanka are far from competitive. The cement, aluminum and tiles markets are all dominated by a few large players. Cross-ownership links between competitors further exacerbate the lack of effective competition. Although evidence of anti-competitive conduct, such as abuse of dominance, is tentative based upon our research, it is certain that competition in markets related to housing construction is far from robust.

How best to address these problems and ensure that markets function in a way that benefits consumers, particularly the urban housing poor, is a wide-ranging, multifaceted challenge. One important element of any solution is to move towards a meaningful and rigorous competition law regime. As discussed in Section 3.4, Sri Lanka currently has little to no competition law enforcement, much less an effective one. However, the existing law and competition agency could serve as the beginnings of competition law for the benefit of consumers, with sufficient political will and popular support.

This section sets out potential policy recommendations aimed at strengthening Sri Lanka's competition law regime. These recommendations include revising the competition law, competition law education, competition law enforcement, and prioritizing the most worthwhile initiatives.

Amending the existing competition law

As discussed in Section 3.3, the current competition law technically addresses anti-competitive conduct from cartels to abuse of dominance. However, revising and clarifying the law to more clearly set out the categories of anti-competitive conduct and the approaches to enforcement by the agency would likely energize competition law enforcement. In addition, the law must expressly include oversight of mergers by CAA.

Amending the law in this manner would bring Sri Lanka's competition legislation in line with the standard legal framework adopted by most other countries. It would help shift CAA from its current exclusively consumer protection orientation to a more modern enforcer with a mandate to protect free and fair competition in Sri Lanka for the benefit of consumers.

Competition law education

Research conducted for this study indicates that there is a pervasive lack of awareness about the nature and scope of anti-competitive practices as well as the role of the competition agency, the Consumer Affairs Authority. The fact that CAA has focused excessively on areas such as price control, product labeling, and deceptive advertising, as opposed to anti-competitive practices, has contributed to the widespread perception of the agency as a consumer protection body. Moreover, as reflected by the KIIs conducted for this study, even CAA personnel themselves are unclear about the extent to which the competition law can be used to investigate and adjudicate cases.

In this context, it is crucial to raise public consciousness of what constitutes anti-competitive practices, the harm they cause, and what can be done to effectively address these. Although CAA does carry out public awareness campaigns, these initiatives almost entirely target consumer protection issues. It is equally important to increase awareness of the scope of the law within the agency. As set out in Section 3.4, the law is broad enough to deal with abuse of dominance and anti-competitive practices. It is also essential to educate legislators on the importance of competition law and how it can benefit the economy, growth, consumer welfare, and consumer confidence. It is critical to educate the business community as to why having clear rules of the game is helpful to markets and to the welfare of firms. Finally, the judiciary must be included in this outreach and education process. Judges need to build up their expertise in competition issues, and the first step in accomplishing this goal is to establish basic concepts in "why" and "how" competition law should be enforced.

Competition law enforcement

Although Sri Lanka's competition law has sufficient powers to deal with anti-competitive practices, the competition agency has been dormant with respect to enforcement in this regard. As discussed in Section 3.4, CAA and CAC have neither investigated nor issued orders on anti-competitive practices from 2010 to 2020. As such, it is clear that even an amended competition law in and of itself is not sufficient to address such practices. An independent competition authority with adequate financial and professional resources is vital.

Workable independence is key for the effective functioning of regulatory authorities. At present, CAA's governance structure lacks the conditions essential for workable independence and insulation from political capture. The power to appoint and remove cadre and to determine wages lies with the line minister and not a parliamentary body. It is important that these powers be moved to a parliamentary body to safeguard the independence of the agency.

The KIIs conducted for this study indicate that the recruitment of professionals by CAA is impeded by resource constraints, lack of organizational legitimacy, and politicization. The competition agency receives most of its funding from the state, supplemented by a small percentage from fines. Reliance on the state for funds combined with the relatively small amount received, undermine regulatory independence and restrict the hiring of professionals at skills-based salaries.

Addressing the problem of inadequate finance and lack of competent personnel is complex and will have several phases. First, CAA has to be revamped, with a renewed and strong focus on competition. Second, this new, reinvigorated entity should be made the appellate body for the country's specialized regulators - for instance, the Public Utilities Commission of Sri Lanka (PUCSL); the Telecommunications Regulatory Commission (TRC); and the Securities and Exchange Commission (SEC). The benefit of this arrangement is that the competition agency's costs would be funded by regulatory levies collected by these specialized regulators.

While this framework will help resolve issues of finance and competent personnel, it does require legislative, public and business community buy-in, as discussed previously in this section. Obtaining this buy-in and implementing this framework is a long-term process that requires consistent, sustained support. Certain phases, such as the concept of establishing appellate functions within CAA, will likely require particularly long time horizons.

Prioritizing the most useful initiatives

If competition and the competition agency are to be strengthened and reinforced in a sustainable fashion, it is important to carefully prioritize policy actions. Policy measures that are crucial for enforcement should be identified and publicized. As discussed in Section 3.4, all resources should not be spent on enforcing price controls or labeling.

Further, the agency's operations are not transparent. There is very little public information on procedures, investigations, enforcement actions and orders pertaining to anti-competitive practices. CAA lacks legitimacy in the eyes of the public, with stakeholders opting to go to courts rather than take their complaints to this entity. It is important to address such organizational and procedural issues as a priority.

As set out in this study, trade policy plays a key role in enhancing or lessening competition. As such, trade policy should be integrated with competition law initiatives so that importers (which are usually smaller players in the market) can compete effectively against large domestic players. The final step, and perhaps of lesser priority, is to amend the current law by bringing in provisions to handle merger control.

Clarifying what the competition agency does and how it can benefit consumers in concrete and specific ways will in turn enhance the agency's effectiveness and legitimacy. Establishing clear and achievable goals and setting realistic public expectations is critical in ensuring reforms are sustainable.

Adopting and implementing these recommendations will not be easy, nor is it likely that they will occur quickly. Aligning bureaucratic, political, and public interests to engage in a reform process is always difficult, particularly in the face of vested interests and fiscal constraints. However, even if the process is incremental and gradual, this is an effort worth undertaking, given the significant benefits that it will generate for the economy as a whole, and the affordable housing sector in particular.

6.2 Trade Policy

The study highlights the nexus between trade policy and anti-competitive practices in the construction industry. Trade policy and other government policies have been used to protect domestic manufacturers from external competition and promote the emergence of dominant companies and other anti-competitive practices. These policies have negatively affected consumers through higher prices, lack of availability of raw materials as well as by limiting choice. More recently, across-the-board import controls were imposed to address the severe balance of payments crisis in Sri Lanka. These restrictions further exacerbated the impact of trade policies on consumers, particularly in low-income households.

The findings from this study call for the gradual phasing out of trade restrictions and avoidance of ad hoc import controls to address internal and external sector imbalances.

Greater trade openness will prevent domestic manufacturers from abusing their market power by allowing new entrants into the market and increasing contestability (Bradford and Chilton 2019). Greater competition will also force manufacturers to become more productive while also benefiting consumers through more competitive pricing.

6.3 Housing affordability

The lack of a cohesive long-term housing policy to address low-income housing has been a major reason for the low number of affordable houses constructed. A large part of the government's housing policy, especially over the last two decades, was carried out with the intention of clearing out slums to release land for development (The World Bank 2012). In addition to addressing housing policy issues, addressing the failure in the markets for land, building materials and the construction industry is critical to making housing affordable (World Bank 1993).

Improving the business environment

The role of the state needs to evolve from being a provider of housing for all its citizens to one that creates the necessary legislative, administrative and policy environment to improve the overall market for housing. The government's direct involvement in the construction of housing, while also being the regulator of the sector, can lead to conflicts of interest and the possibility of government agencies circumventing regulations. The government needs to instead create a conducive policy environment that incentivises construction of affordable housing by private entities. Such policies would entail creating a competitive environment within the construction industry by removing the protection afforded to some industries, through import tariffs and para-tariffs, as well as addressing the concentration of ownership in certain building materials industries.

Addressing institutional failure

The existence of multiple agencies with overlapping functions has created bottlenecks in developing policies and executing projects to cater to the increasing demand for adequate and affordable housing. As mentioned earlier, although NHDA was mandated to execute housing policies and has been involved in the construction of low-income housing schemes for decades, it took a step back from housing construction in Colombo since UDA took over in 2010. Changes in the mandates and responsibility of these agencies has led to a loss of information and data which is critical for future planning. The multiplicity of government agencies dealing with construction in general, and the housing sector in particular, and the lack of coordination among these agencies needs to be addressed to improve the performance in this sector. A proper regulatory framework overseeing the activities in this sector is also necessary.

Addressing regulatory issues

Availability of land is one of the most contentious issues and a major barrier to bridging the affordability gap. The state owns around 80% of land. Hence, developers rely on the release of government lands for development. Unlocking some of this land and other idle lands for housing projects and related infrastructure, particularly transportation, will be critical to addressing the housing gap. However, land allocated for housing projects should be where households can access the services that they require such as education and health, and be within a reasonable distance of employment opportunities. Issues with titling add to this problem. Despite a land registration system, there is no guarantee of rights, as it is possible for a piece of land to have multiple deeds. The process of obtaining a deed is a complicated one and can take many months. Additionally, some laws that protect tenants from eviction such as the Rent Act No. 7 of 1972 and the Ceiling on Housing Property Law No. 1 of 1973 have limited the supply of rental housing (The World Bank 2012). Improved titling of lands and digitization of land registries to ensure clear ownership of lands would lead to development of lands and enable prospective homeowners to access finance.

Provision of infrastructure and other support services

The government can facilitate large scale housing developments by investing more in public services such as water and sanitation. Improving public transportation services as well as other forms of connectivity including internet services could unlock hitherto undeveloped regions for housing developments.

Achieving economies of scale and improving the productivity of the construction industry

Construction in Sri Lanka is costly and inefficient. Improving efficiency in the construction industry would significantly reduce the cost of construction of housing units making it more affordable. Construction of standard housing units and the use of prefabricated parts may be some ways in which scale efficiencies could be generated.

Reducing the cost of borrowing and access to financing

Financing options are usually available to middle- and high-income households, but not to low-income households. Banks are reluctant to finance housing due to issues surrounding the titling of land and the low profit margins on small housing loans. The uncertainty regarding tenure compounds the issue. Inadequate risk management and poor mechanisms for credit information is another problem that affects the financing of low-income housing (The World Bank 2012).

Moreover, some low-income households construct their houses gradually, expanding and developing their house in incremental stages, as opposed to building a complete house outright. The financing requirements of incremental housing are different from that of standard housing finance. Incremental housing finance involves the provision of short-term small loans that are flexible (Wakely and Riley 2010). However, the incremental housing finance market is underdeveloped in Sri Lanka (The World Bank 2012). Reducing borrower risk by providing mortgage guarantees and encouraging banks to access low-cost wholesale funding would increase access and reduce the cost of borrowing, particularly for low-income earners.

Improving data availability

The lack of a centralized database and the non-availability of recent data on the housing sector was a major impediment in this study. Although previously, regular surveys and studies were conducted to identify the gaps in this sector, the most recent data on the state of the housing sector in Sri Lanka is from a survey carried out in 2016 (Housing Needs Assessment and Data Survey, 2016). A nationwide census on the state of housing in Sri Lanka has not been conducted since 2012.[48] Establishing a proper institutional mechanism to collect, analyze and disseminate data on housing will facilitate long-term planning in this sector and ensure the overall objectives for the sector and the economy are realized.

[48] *Census of Population and Housing 2012, Department of Census and Statistics.*

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Appendices

Appendix A

Semi-structured questionnaires used for KIIs

Note: These are some of the questions that were most asked during the KIIs. However, not all questions were asked at every KII.

1. What does the urban landscape currently look like for the urban poor in Colombo and what contributes to it looking the way it does?
2. Has the urban housing market changed in the last 30 years?
3. How do you define affordability/affordable housing? How do you define the urban poor?
4. What has been the role of the government in the provision of affordable housing for the urban poor?
5. What has been the role of the private sector in the provision of affordable housing and has the government done anything to encourage it? What are some of the obstacles faced in enticing the private sector into this sector?
6. Have you come across any anti-competitive practices in the construction industry? If yes, has it affected the provision of affordable housing?
7. Can you give us a brief overview and history of competition policy/law in Sri Lanka?
8. Were there any investigations or cases pertaining to the construction and housing industries, including in key input markets?
9. Do you know of any other anti-competitive practices that violate the CAA Act of 2003 in the construction/housing industry?
10. Does the CAA Act of 2003 distinguish between corruption and anti-competitive practices?
11. Is the CAA Act of 2003 sufficient as it is?
12. How effective is the implementation and enforcement of this law?

13. What can you tell us about the market structure of the cement, tile and aluminum industry?
14. What can you tell us about the conduct of firms in the cement, tile, aluminum industry?
15. Are these players exploiting the distribution network? If so, in what way?
16. Describe the structure of the import market for these industries.
17. Can you please tell us what changes have been made to the tariffs for tile and sanitary ware since 2020 and what possible reasons there might be for these changes?
18. What can you tell us about the impact of protectionism on the market for these industries and how it affects the affordability of low-cost housing?
19. Do you have any suggestions for liberalizing trade policy to improve competition and affordability of low-cost housing?

Questionnaire used for retailers/hardware stores:

1. What products and brands do you sell?
2. Are they locally produced or imported?
3. How do you decide the price you will sell to the customer?
4. Do you think the prices you pay the suppliers/manufacturers/importers are fair?
5. Do you have a standard agreement with your suppliers? If yes, can you tell us what this agreement looks like?
6. Do you sell products from multiple manufacturers?
7. Do you try to sell a particular product along with another product according to your agreement with your supplier? For example, when a customer is buying tiles, do you also have to sell them a bag of cement? If so, why do you do this?
8. What aspects of Sri Lanka's consumer affairs law are you familiar with? Would you go to CAA if you had a complaint/issue?

Appendix B

The first step in calculating the housing supply for 2022 involved estimating the percentage growth in occupants between 2012 and 2022. For this purpose, it was assumed that the percentage growth in occupants would be equal to the rate of population growth during that period. This assumption allows for projecting the increase in the number of occupants between the two years. Next, the estimated growth of occupants from 2012 to 2022 was divided by the average household size. By doing this, the estimated new housing stock needed to accommodate the growing population in 2022 was derived[49]. The average household size in 2022 was assumed to remain the same as in 2012.

However, it is important to note that this estimation method has certain limitations. Since it relies on data from 2012, any changes or developments in housing trends, population dynamics, or other factors are not taken into account. Therefore, the accuracy of these projections may be influenced by any shifts in housing preferences, population dynamics, or other relevant factors that occurred between 2012 and 2022.

Table 8: Estimates of housing demand and supply

District	(Demand - 2012)Total Households - 2012	(Supply 2012)Total Occupied Housing Units - 2012	Population Growth (2012& 2022)	Average Size of Household - 2012	Est. Housing Supply in 2022	Est. Housing Demand in 2022	Increase in Supply from 2012 to 2022	Increase in Demand- from 2012 to 2022	Shortfall - 2022
Nationwide	5,251,126	5,191,442	9.4%	3.8	5,685,151	5,875,009	9.5%	11.9%	189,858
Colombo	577,779	566,524	7.3%	3.9	608,407	635,385	7.4%	10.0%	26,978
Gampaha	604,183	598,420	6.3%	3.7	636,301	659,189	6.3%	9.1%	22,888
Kalutara	305,319	301,544	6.1%	3.9	320,358	331,282	6.2%	8.5%	10,924
Kandy	347,159	342,115	9.4%	3.8	375,096	394,474	9.6%	13.6%	19,378
Matale	129,078	127,578	9.9%	3.6	140,431	147,222	10.1%	14.1%	6,791
Nuwara Eliya	178,226	176,113	10.8%	3.9	195,440	200,769	11.0%	12.6%	5,330
Galle	271,624	269,362	8.3%	3.8	291,920	301,842	8.4%	11.1%	9,922
Matara	205,722	203,763	8.0%	3.9	219,898	224,103	7.9%	8.9%	4,205
Hambantota	156,735	155,988	14.1%	3.7	178,338	184,054	14.3%	17.4%	5,716
Jaffna	139,078	136,074	7.8%	4	146,800	149,762	7.9%	7.7%	2,962
Mannar	22,743	21,979	16.0%	4	25,642	28,049	16.7%	23.3%	2,407

[49] In other words, using Table 8 in Appendix B, new housing stock needed was estimated by multiplying the total number of households in 2012 (Column 1) by the increase in the population from 2012 to 2022 (Column 8).

Vavuniya	41,961	41,588	13.8%	4	47,435	50,000	14.1%	19.2%	2,565
Mullaitivu	24,750	24,670	9.0%	4	26,898	27,500	9.0%	11.1%	602
Kilinochchi	27,511	27,338	19.5%	4	32,752	33,750	19.8%	22.7%	998
Batticaloa	135,645	133,766	12.3%	4	150,537	155,263	12.5%	14.5%	4,726
Ampara	165,532	163,501	16.3%	4	190,111	193,333	16.3%	16.8%	3,222
Trincomalee	95,529	93,836	17.4%	4	110,344	113,846	17.6%	19.2%	3,502
Kurunegala	440,944	437,687	8.1%	4	473,104	483,889	8.1%	9.7%	10,785
Puttalam	203,547	201,706	11.8%	3.7	225,727	229,730	11.9%	12.9%	4,003
Anuradhapura	231,771	229,489	11.7%	3.6	256,521	265,833	11.8%	14.7%	9,313
Polonnaruwa	110,575	109,834	11.2%	3.6	122,038	124,722	11.1%	12.8%	2,685
Badulla	209,956	206,456	10.3%	3.7	227,858	242,973	10.4%	15.7%	15,115
Monaragala	120,546	119,902	13.6%	3.6	136,267	141,389	13.6%	17.3%	5,122
Ratnapura	285,059	283,429	10.2%	3.8	312,083	313,947	10.1%	10.1%	1,864
Kegalle	220,154	218,780	7.3%	3.7	234,847	242,703	7.3%	10.2%	7,856

Appendix C

Table 9: Housing Laws

Act	Description
Rentals	
Rent Restriction Act (1942)	This law was enacted by the British government to force rents to remain at existing levels during a housing shortage.
Rent Act No. 7 of 1972 [Amendments made in 1980 and 2002]	This act governs all aspects of renting property except for premises that have been constructed after 1980, business premises located in certain areas, premises owned by registered companies or premises let to migrant workers earning above a certain threshold or premises rented to non-resident companies. The Rent Act was preceded by the Rent Restriction Act No. 29 of 1948 (*Rent Act* 1948). The law aimed to restrict the landlord from demanding, receiving, recovering or increasing the rent on premises governed by this act by an amount in excess of the authorized 'standard rent' prescribed in the act. The law also prescribes how arrears in rent, eviction, and subletting ought to be handled. Properties which are exempted from this act are instead subject to normal tenancy/lease agreements ("Rents: Can Landlord and Tenant Freely Agree Rents in Sri Lanka?" n.d.).
Protection of Tenants (Special Provisions) Act No. 28 of 1970	This law aimed to protect tenants from forceful eviction by landlords of any premises. It is unlawful for the landlord to use force, violence, restraint, or to inflict harm or damage or loss to tenants to compel them to vacate the premises, or for a landlord to discontinue to withhold amenities to the tenants or to interfere in the occupation to the property to force the tenants to vacate (*Protection of Tenants (Special Provisions) Act* 1970). This law, however, is no longer operative. It lapsed 18 years after its commencement.
Housing/ownership	
Housing Loan Act (1949)	This Act was used to promote private sector investment in

	housing for the middle and working class populations
Condominium Property Act No 212 (1970)	This Act has provisions that overlook the subdivision of properties that are owned individually and those that are owned in common as well as making provisions for the management and terminations of such properties. This law was repealed and replaced with the Apartment Ownership Act No. 11 of 1973
Ceiling on Housing Property Law No. 1 of 1973 Ceiling on Housing Property (Special Provisions) Act No. 4 of 1988	This law aimed at restricting the number of houses and properties which can be owned by a private individual or family. It also restricts the floor area of houses and the extent of land on which houses can be constructed as well as its costs (Wickramaratne Rupesinghe and Rupesinghe 2007). This limit on ownership was later removed by the enactment of the Ceiling on Housing Property (Special Provisions) Act No. 4 of 1988 (*Ceiling On Housing Property (Special Provisions) Act (No. 4 of 1988)* 1988).
Apartment Ownership Law No. 11 of 1973 [Amendments made in 1982, 1999 and 2003]	This law applies to a property consisting of buildings with one storey and more which function as independent residential or non-residential units.The law governs the registration of such properties, formation of owner associations, sharing of common elements, duties of owners, etc.
Common Amenities Board Law No 10 of 1973 [Amendments made in 1982 and 2003]	This act sets up the Common Amenities Board with the object of controlling, managing, maintaining and administering the common amenities of residential or non-residential units in which over 75% of owners are provided with one or more common amenities/elements. Subsequent to the 2003 amendment, the Common Amenities Board is now called the Condominium Management Authority.
Public housing	
Urban Development Authority Act No. 70 of 1979	The law provided the legal provisions for the set up of UDA, vesting it the powers to promote urban development, including urban housing. UDA is empowered to declare an area as a development area and to acquire these lands from its owners for the purposes of development. However, it does not guarantee these owners fair or market rate compensation for their properties.

Urban Councils Ordinance No. 61 of 1939	This ordinance established Urban Councils, which were vested with powers of governing development, land and housing related matters in local areas. Urban Councils can acquire lands or properties for the purposes it deems necessary (Wickramaratne Rupesinghe and Rupesinghe 2007).
National Housing Development Authority Act No. 17 of 1979	This law established NHDA, vesting in it the powers to construct residential premises, sale, lease or rent of these premises, redevelop and resettle underserved settlements, provide loans for the purchase of residences, establish housing estates and to acquire, lease, hire, mortgage, sell or dispose of movable or immovable properties (Wickramaratne Rupesinghe and Rupesinghe 2007).
National Housing Act No. 37 of 1954	This act established the office of the Commissioner for National Housing, empowering the commissioner to carry out any housing object specified in the legislation. Housing objects specified in the act include the construction of residences, manufacture and supply of building materials, provision of roads and utilities, administration and management of buildings, provision of amenities to residents of housing schemes, development of land and providing financial assistance to carry out housing objects (Wickramaratne Rupesinghe and Rupesinghe 2007).
Land	
Land Acquisition Act No. 9 of 1950	This act sets out the legal provisions for the state to acquire private lands to be used for public purposes. The act lays out the procedure to be followed when acquiring private lands. It also aims to safeguard the rights of the landowners as well as to accommodate the needs of the state.
Land Reform Law No. 1 of 1972	This law aimed to restrict the extent of agricultural land that could be owned by an individual and to ensure that available agricultural lands were utilized productively to generate employment. When this law was enacted, individuals who owned land in excess of the prescribed amounts lost their rights, title and interest to these properties which were then vested with the Land Reform Commission. However, since that period the limitations of land ownership have been lifted.

The Land Grants (Special Provisions) Act No. 43 of 1979	Subsequent to the change of government which brought in the Land Reforms Law, the Land Grants (Special Provisions) Act was enacted to vest in the State the lands that had been vested with the Land Reform Commission and to grant landless citizens with agricultural or estate lands free of charge (Wickramaratne Rupesinghe and Rupesinghe 2007).
General	
Sanitation Ordinance (1882)	This ordinance was enacted with the aim of improving sanitation in the country and improving town facilities and the living conditions of the urban populace.
Municipal Council Ordinance (1865)	This ordinance was enacted to allow for the formation of municipal councils and empower local authorities to intervene and regulate building and construction in the city.
Housing and Town Improvement Ordinance (1915)	This is an ordinance implemented to provide for the improvement of towns and housing.
Urban Council Ordinance (1939)	This ordinance makes provisions for the establishment of urban councils for the purposes of local government in Sri Lanka.
Town Council Ordinance (1946)	This is an ordinance to make provisions for the establishment of town councils for the purposes of local government in Ceylon.
Town and Country Planning Ordinance (1946)	This ordinance was established to authorize the formulation and implementation of a national planning policy with the object of promoting and regulating the integrated planning of economic, social, physical and environmental aspects of land in Sri Lanka and to provide for the conservation of natural environment, buildings of architectural and historic interest and places of natural beauty.
Urban development authority planning and building regulations	These regulations apply to all residential and non-residential properties located in urban development areas. These regulations provide the guidelines on the suitability of the site, use of site, floor area ratios, access, specifications of lots, height of the building, street lines and building lines, subdivision of land, layouts for flats and housing units, open spaces around buildings, additional requirements for high rise buildings, environment preservation, clearance from

	electric lines and etc (*Urban Development Authority Planning and Building Regulations*, n.d.).

Appendix D

1. Global product market overview for cement

Cement is a global commodity manufactured across the world at thousands of manufacturing plants. While cement can be used on its own, its principal use is as a binder in the production of concrete, the glue that sets, hardens, and adheres to other materials giving strength and stability to structures. Most modern engineering projects, from road development to residential housing use concrete, and thereby, cement (UN Climate Technology Center and Network n.d.). The global production of cement is led by China, which produced an estimated 1.64 billion MT per year in 2021 followed by India, Vietnam, and the United States (Statista n.d.), and was valued at USD 326.1 billion in 2021, with the projected market for 2022 valued at USD 481.73 billion (Fortune Business Insights n.d.)

Table 10: Gazette changes for 2020

Date	**Gazette number**	**Temporary suspension (HS Codes)**	**Credit Facility (HS Codes)**
16th April 2020	2171/5	2523.29.00 2523.29.20	2523.29.30
22nd April 2020	2176/19	-	2523.29.00 2523.29.10 2523.29.20 2523.29.30 2523.30.00 2523.90.00
16th July 2020	2184/21	-	2523.29.10 2523.29.20 2523.30.00 2523.90.00

2. Global product market overview for tiles

Tiles in building construction are thin plates or elements used to cover surfaces like roofs, floors, and walls. The global market for tiles encompasses an extensive product portfolio, with broad segmentation by both application and materials used in the manufacturing process.[50] As such, there is a wide variety of tiles available in the market, ranging from ceramic to granite and limestone. However, for the purposes of this study, the ceramic wall and floor tile market will be analyzed given the prevalence of their use in the domestic and foreign markets.

[50] *Products segmented by application include roofing, flooring, wall, and partition tiles while the manufacturing process segmentation include ceramic and porcelain tiles.*

Ceramic tiles are multi-purpose products that have varied applications across different geographies and end-user industries (Mordor Intelligence n.d.). In 2021, the global market was valued at USD 54.41 billion and is expected to grow to USD 77.82 billion by 2028 (Fortune Business Insights n.d.). These tiles are made commercially available in a vast range of colors, sizes, and textures through wide reaching distribution networks,[51] to cater to the expectations of end-use customers (Grand View Research n.d.).

Figure 21: Market Segmentation of the Global Tile Industry

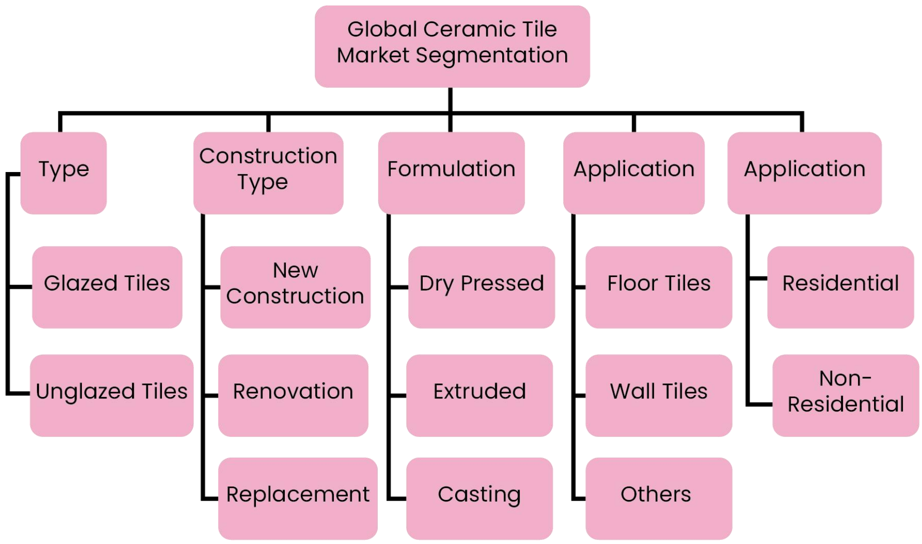

Table 11: Sizing options available in the local market for floor and wall tiles

Tile Type	**Available Sizes (inches)**				
Floor Tiles	12" x 12"	16" x 16"	20" x 20"	24" x 24"	12" x 24"
	32" x 32"	24" x 48"	32" x 48"	48" x 8"	
Wall Tiles	8" x 8"	8" x 12"	12" x 18"	12" x 24"	12" x 36"
	16" x 32"	6" x 24"	8" x 24"	12" x 12"	4" x 16"

Source: Tile Industry Report 2021, JB Securities.

[51] *Distribution networks include distributors and wholesalers as well as collaborations with construction companies and architects and designers.*

Table 12: A Breakdown of subsidiaries and associate companies of Royal Ceramics PLC

Subsidiaries	● Rocell Bathware Limited ● Royal Ceramics Distributors (Private) Limited ● Ever Paint and Chemical Industries (Private) Limited ● Nilano Garments (Private) Limited ● Rocell Pty Ltd ● Biscuits and Chocolate Company Limited ● Rocell Properties Limited ● CP Holding (Private) Limited ● Lanka Walltiles PLC ● Lanka Ceramic PLC
Associate companies	● Delmege Limited ● L B Finance PLC

3. Global product market overview for aluminum

Aluminum is one of the most widely used metals in the world, contributing to the production of airplanes to utensils. Its qualities such as the lightweight, durability, corrosion resistance, and heat and electrical conductivity have diversified its end-use applications (Yahoo Finance 2022). The use of aluminum in the construction industry gained popularity in the 1920s when the cost of the material reduced significantly and the metal began to be used extensively for drains, wall panels, finishing roofs, etc. (All About Aluminium n.d.). Today, the construction industry accounts for around one-fifth of the world's aluminum consumption. While there are many forms of aluminum such as foils, sheets, plates, and wires, this study will focus on the extrusion segment of the market.

Extrusion is a modern process in which aluminum billets are heated and pushed through a shaped die opening. The opening can be modified to create different shapes and sizes to fulfill a user's specific needs (Impol n.d.). A detailed breakdown of the manufacturing process is given in Figure 1. The product is most commonly used to create window and door systems. The global product market was estimated at around USD 89.65 billion in 2021 and is projected to reach approximately USD 152.85 billion by 2030 (Global News Wire 2022).

Appendix E

Table 13: Quotes from KIIs

Broad theme	**KII number**	**Key finding**	**KII quotes**
Anti-competitive practices in key input markets	01	The tile market is practically a duopoly	"There are three entities in the tile market but two owners. Lanka Tiles and Royal Ceramics is owned by one person, Dhammika Perera, and Macktiles is owned by the Multilac group. Right now, since importers are completely eliminated from the equation, it is essentially a duopoly."
	02	Lanka Tiles engages in tied selling	"When you buy a set of Lanka Tiles they also get you to buy their bathroom sets or tile adhesive or mortar"
	03	Rocell delays supplying tiles	"Rocell delays supplying goods from anywhere between 6 months to a year after a sale has been made. Initially, they did not change the price but when the tax structure started changing they sent letters to customers saying that they could not supply products at the agreed price. The customers agreed to this because they didn't have a choice."
	04	Aluminum market	"There are three players in the market, Alumex, Lanka Aluminium and Swisstek. Swisstek and Alumex are owned by Dhammika Perera and he owns about 15% of Lanka Aluminium. So there's a monopolistic market for aluminum."
	05	Alumex engages in exclusive dealing	"Manufacturers don't permit hardware stores to sell rival products."
	06	The cement market is oligopolistic	"Cement is like an oligopoly"
Limitations of the Consumer Affairs Authority	07	Political influence	"When CAA wanted to start an investigation into cement, the minister signed an agreement with all the parties, essentially endorsing the anti-competitive practices of these groups. Collusion and price-fixing was done with the blessing of the minister. These cement corporations fund the trade minister's upcoming election campaigns. Insee Cement paid millions for the 2019 presidential campaign and the general election."
	08		"When we wanted to take action against Litro Gas when they stated in a public interview that they are working together

			with Laugh Gas, there was a lot of pressure on us and we couldn't do it"
	09		"There are multiple complaints about Lanka Walltiles but we can't investigate them. They won't allow it"
	10	Corruption	"The staff at CAA are corrupt and are sometimes bribed by these companies themselves. At one point, they were raiding Keells but not Cargills. There's a reason for this and when asked why Cargills was excluded, they didn't have anything to say. But we knew that Cargills had been entertaining these people outside. It's a corrupt operation."
	11		"It's not the fault of the Consumer Affairs Authority, they're just working in a system that's highly corrupt"
	12	Capacity issues	"A lot of the things that were missing with regard to anti-competitive practices in the act are being included as an amendment although there is still a lot of research that needs to be done in order to determine what these should be."
	13		"The act itself is quite robust, it is just that when it comes to the implementation of the law, it fails."
	14		"There aren't many people who are qualified/have experience in this area."
	15		"The system itself doesn't attract the right people because the pay isn't very good"
	16	Lack of awareness	"The lack of awareness in this area led to a lesser number of complaints than there would have been if people had more knowledge"
	17		"When you go to complain, if it is against a big company, they never accept the case. If you insist, they'll accept it but will tell you that it's not going to work and somehow persuade you not to file the case."
	18	Lack of faith in CAA	"Because people have more faith in the court system than they do in CAA, they prefer to bypass CAA and go directly to court. People who go to CAA are told by staff that filing an inquiry might not be successful or might take too long and this discourages them from proceeding with their complaints.This also contributes to the lack of faith in CAA.

Note: These quotes are in the form of non-verbatim transcript

Appendix F: Cohorts tracked to estimate lifetime income

The top row depicts the mid-age of each age group, and the first column presents the survey years. Accordingly, each cell is the birth year of the group of individuals who are at the respective age group (presented in the top row) in each survey year (presented in the first column). For instance, people who were 19 to 21 years of age in 2001, were born in 1981. If you consider the group of individuals who were born in 1981 and completed their 20 years of age by 2001, as shown by the shaded cell in Table 15, we can follow their income data only up to the age of 38 years. This limitation meant it was not possible to follow a group of people over their entire lifespan to estimate their lifetime income.

Table 14: Cohorts tracked to estimate lifetime income

	20	23	26	29	32	35	38	41	44	47	50	53	56	59
2001	1981	1978	1975	1972	1969	1966	1963	1960	1957	1954	1951	1948	1945	1942
2004	1984	1981	1978	1975	1972	1969	1966	1963	1960	1957	1954	1951	1948	1945
2007	1987	1984	1981	1978	1975	1972	1969	1966	1963	1960	1957	1954	1951	1948
2010	1990	1987	1984	1981	1978	1975	1972	1969	1966	1963	1960	1957	1954	1951
2013	1993	1990	1987	1984	1981	1978	1975	1972	1969	1966	1963	1960	1957	1954
2016	1996	1993	1990	1987	1984	1981	1978	1975	1972	1969	1966	1963	1960	1957
2019	1999	1996	1993	1990	1987	1984	1981	1978	1975	1972	1969	1966	1963	1960

Source: Authors' calculation.

Appendix G: Housing Affordability Index (HAI) for 30-Year-Olds by Income Quantile

Table 15: HAI for 30-year-olds by income quantile for a 500 sq ft house

	10th Percentile	20th Percentile	25th Quantile	30th Percentile	40th Percentile	50th Percentile	60th Percentile	70th Percentile	75th Quantile	80th Percentile	90th Percentile
1991	0.34	0.49	0.59	0.66	0.91	1.11	1.44	1.78	2.03	2.29	3.62
1992	0.35	0.49	0.59	0.66	0.91	1.10	1.42	1.76	2.01	2.29	3.58
1993	0.35	0.49	0.60	0.67	0.92	1.10	1.42	1.76	2.01	2.31	3.57
1994	0.36	0.50	0.61	0.68	0.93	1.10	1.42	1.77	2.02	2.34	3.58
1995	0.38	0.54	0.65	0.72	0.98	1.17	1.50	1.88	2.18	2.50	3.80
1996	0.40	0.58	0.68	0.76	1.04	1.23	1.58	1.99	2.32	2.66	4.02
1997	0.41	0.60	0.71	0.79	1.07	1.27	1.63	2.05	2.42	2.75	4.15
1998	0.45	0.66	0.78	0.86	1.16	1.38	1.76	2.23	2.64	3.02	4.57
1999	0.51	0.73	0.87	0.95	1.28	1.54	1.94	2.48	2.94	3.36	5.12
2000	0.53	0.74	0.90	0.97	1.30	1.58	1.97	2.54	3.01	3.45	5.27
2001	0.52	0.75	0.90	0.97	1.30	1.54	1.91	2.46	2.92	3.43	5.13
2002	0.56	0.82	0.98	1.06	1.43	1.67	2.05	2.65	3.14	3.75	5.53
2003	0.57	0.85	1.00	1.08	1.46	1.69	2.06	2.66	3.15	3.82	5.56
2004	0.55	0.81	0.96	1.03	1.40	1.60	1.95	2.53	3.08	3.65	5.25
2005	0.53	0.77	0.90	0.98	1.33	1.51	1.83	2.39	2.97	3.45	4.93

2006	0.50	0.71	0.83	0.90	1.22	1.38	1.67	2.19	2.77	3.17	4.50
2007	0.50	0.72	0.85	0.91	1.24	1.41	1.67	2.19	2.78	3.28	4.66
2008	0.49	0.71	0.84	0.90	1.22	1.38	1.62	2.13	2.70	3.27	4.64
2009	0.53	0.76	0.91	0.96	1.30	1.48	1.73	2.26	2.87	3.55	5.05
2010	0.60	0.84	1.00	1.07	1.43	1.60	1.87	2.44	3.08	3.85	5.50
2011	0.64	0.88	1.04	1.11	1.49	1.64	1.92	2.50	3.14	3.97	5.67
2012	0.63	0.86	1.00	1.08	1.44	1.56	1.84	2.38	2.98	3.80	5.44
2013	0.68	0.92	1.08	1.15	1.54	1.67	1.94	2.52	3.23	4.03	5.71
2014	0.75	1.01	1.18	1.25	1.67	1.83	2.09	2.73	3.55	4.37	6.13
2015	0.79	1.06	1.24	1.30	1.75	1.92	2.17	2.83	3.75	4.55	6.32
2016	0.83	1.10	1.30	1.37	1.82	2.00	2.27	3.02	4.03	4.81	6.65
2017	0.87	1.14	1.36	1.45	1.91	2.08	2.38	3.21	4.33	5.11	7.01
2018	0.92	1.21	1.45	1.54	2.03	2.21	2.53	3.45	4.68	5.47	7.48
2019	1.00	1.34	1.59	1.68	2.20	2.38	2.66	3.63	4.97	5.94	8.15
2020	1.10	1.50	1.76	1.85	2.41	2.60	2.86	3.89	5.36	6.53	8.99
2021	1.01	1.40	1.62	1.70	2.21	2.38	2.57	3.50	4.85	6.00	8.28

Table 16: HAI for 30-year-olds by income quantile for a 1000 sq ft house

	10th Percentile	20th Percentile	25th Quantile	30th Percentile	40th Percentile	50th Percentile	60th Percentile	70th Percentile	75th Quantile	80th Percentile	90th Percentile
1991	0.20	0.29	0.35	0.39	0.54	0.66	0.86	1.06	1.21	1.36	2.15
1992	0.21	0.29	0.35	0.39	0.54	0.65	0.85	1.05	1.20	1.36	2.13
1993	0.21	0.29	0.36	0.40	0.55	0.65	0.84	1.05	1.20	1.37	2.12
1994	0.21	0.30	0.36	0.40	0.55	0.66	0.84	1.05	1.20	1.39	2.13
1995	0.23	0.32	0.39	0.43	0.58	0.69	0.89	1.12	1.29	1.49	2.26
1996	0.24	0.34	0.41	0.45	0.62	0.73	0.94	1.18	1.38	1.58	2.39
1997	0.24	0.36	0.42	0.47	0.63	0.75	0.97	1.22	1.44	1.64	2.47
1998	0.27	0.39	0.46	0.51	0.69	0.82	1.05	1.33	1.57	1.79	2.72
1999	0.30	0.43	0.52	0.57	0.76	0.91	1.15	1.47	1.75	2.00	3.04
2000	0.31	0.44	0.53	0.58	0.77	0.94	1.17	1.51	1.79	2.05	3.13
2001	0.31	0.44	0.53	0.58	0.77	0.92	1.14	1.46	1.74	2.04	3.05
2002	0.33	0.49	0.58	0.63	0.85	0.99	1.22	1.58	1.87	2.23	3.29
2003	0.34	0.50	0.60	0.64	0.87	1.00	1.22	1.58	1.87	2.27	3.31
2004	0.33	0.48	0.57	0.61	0.83	0.95	1.16	1.50	1.83	2.17	3.12
2005	0.32	0.46	0.54	0.58	0.79	0.90	1.09	1.42	1.76	2.05	2.93
2006	0.29	0.42	0.49	0.54	0.73	0.82	0.99	1.30	1.64	1.89	2.68
2007	0.30	0.43	0.51	0.54	0.74	0.84	0.99	1.30	1.65	1.95	2.77
2008	0.29	0.42	0.50	0.53	0.72	0.82	0.96	1.26	1.60	1.94	2.76
2009	0.31	0.45	0.54	0.57	0.77	0.88	1.03	1.35	1.71	2.11	3.00

2010	0.36	0.50	0.59	0.63	0.85	0.95	1.11	1.45	1.83	2.29	3.27
2011	0.38	0.52	0.62	0.66	0.88	0.97	1.14	1.49	1.87	2.36	3.37
2012	0.38	0.51	0.60	0.64	0.85	0.93	1.09	1.42	1.77	2.26	3.24
2013	0.41	0.55	0.64	0.68	0.91	1.00	1.15	1.50	1.92	2.40	3.39
2014	0.45	0.60	0.70	0.74	0.99	1.09	1.24	1.62	2.11	2.60	3.64
2015	0.47	0.63	0.74	0.77	1.04	1.14	1.29	1.68	2.23	2.70	3.76
2016	0.49	0.65	0.77	0.81	1.08	1.19	1.35	1.79	2.39	2.86	3.95
2017	0.51	0.68	0.81	0.86	1.14	1.24	1.41	1.91	2.57	3.03	4.17
2018	0.55	0.72	0.86	0.92	1.21	1.31	1.50	2.05	2.78	3.25	4.45
2019	0.59	0.80	0.94	1.00	1.31	1.41	1.58	2.16	2.95	3.53	4.84
2020	0.65	0.89	1.04	1.10	1.43	1.55	1.70	2.31	3.19	3.88	5.34
2021	0.60	0.83	0.96	1.01	1.31	1.42	1.53	2.08	2.88	3.56	4.92

Impact of Anti-Competitive Practices in the Construction Industry on Affordable Housing in Urban Sri Lanka

Advocata Institute