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THE BRAZILIAN BICYCLE INDUSTRY SUPPLY CHAINS AND ITS COMPETITION AGAINST THE INTERNATIONAL BRANDS

AS CADEIAS DE SUPRIMENTOS DA INDÚSTRIA DE BICICLETAS BRASILEIRA E SUA COMPETIÇÃO COM AS MARCAS INTERNACIONAIS

LAS CADENAS DE ABASTECIMIENTO DE LA INDUSTRIA BRASILEÑA DE BICICLETAS Y SU COMPETENCIA CON LAS MARCAS INTERNACIONALES

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ABSTRACT

Bicycles have been used for more than one century for transport, leisure, and sports practices. However, contrary to automobiles, they reached different social classes rapidly worldwide and many factories were created. Brazil, for instance, has many local assemblies and frame manufacturers competing equally with many international brands. In this study, we investigated part of this industry in Brazil – factories in Manaus/Amazonas - that has incentive policies from the Brazilian government to produce and compared it with imported equipment from international manufacturers. We adopted a literature review, empirical knowledge, and economic figures to build this comparison. The results showed that the market in Brazil, after a huge growth during the Pandemic of COVID-19 (2020-2021), is shrinking, increasing the competition between local and international brands. Moreover, they indicated that the actions of the Brazilian government to reduce tariffs on Brazilian companies that produce in the free trade zone in Manaus had positive effects on the reduction of imported goods and in increasing the competition of local industry.

Keywords: Bicycle Manufacture; International Competition; Bike Supply Chains.

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RESUMO

As bicicletas são utilizadas há mais de um século para transporte, lazer e práticas esportivas. Porém, ao contrário dos automóveis, elas alcançaram rapidamente diferentes classes sociais em todo o mundo e muitas fábricas foram criadas. No Brasil, por exemplo, existem muitas montadoras locais e fabricantes de quadros competindo igualmente com muitas marcas internacionais. Neste estudo, investiga-se parte dessa indústria no Brasil – fábricas em Manaus/Amazonas – que conta com políticas de incentivo do governo brasileiro para produzir e compara-se com equipamentos importados fabricados por competidores internacionais. Para tanto, adotamos revisão de literatura, conhecimento empírico e números econômicos para construir essa comparação. Os resultados mostraram que o mercado no Brasil após um enorme crescimento durante a Pandemia de COVID-19 (2020-2021) está encolhendo aumentando a competição entre marcas locais e internacionais. Além disso, eles indicaram que as ações do governo brasileiro para reduzir as tarifas sobre as empresas brasileiras que produzem na zona franca de Manaus tiveram efeitos positivos na redução de bens importados e no aumento da concorrência da indústria local.

Palavras-chave: Fabricação de Bicicletas; Competição Internacional; Cadeia de Suprimentos Bicicletas.

RESUMEN

Las bicicletas se han utilizado durante más de un siglo para el transporte, el ocio y las prácticas deportivas. Sin embargo, a diferencia de los automóviles, llegaron rápidamente a diferentes clases sociales en todo el mundo y se crearon muchas fábricas. Brasil, por ejemplo, tiene muchas asambleas locales y fabricantes de cuadros que compiten en igualdad de condiciones con muchas marcas internacionales. En este estudio, investigamos parte de esta industria en Brasil - fábricas en Manaus / Amazonas - que tienen políticas de incentivos del gobierno brasileño para producir en este polo y lo comparamos con equipos importados. Para ello, adoptamos una revisión de la literatura, el conocimiento empírico y las cifras económicas para construir esta comparación. Los resultados mostraron que el mercado en Brasil después de un gran crecimiento durante la pandemia de COVID-19 (2020-2021) se está reduciendo aumentando la competencia entre marcas locales e internacionales. Además, indicaron que las acciones del gobierno brasileño para reducir los aranceles a las empresas brasileñas que producen en la zona de libre comercio de Manaus tuvieron efectos positivos en la reducción de los bienes importados y en el aumento de la competencia de la industria local.

Palabras clave: Fabricación de bicicletas; Competencia internacional; Cadenas de suministro de bicicleta.

1 INTRODUCTION

Bicycles have been adopted as an urban and rural mode of transport, a leisure instrument, and a way of sports practice for over a century. However, with the development of the automobile industry in many places, bicycles were seen as child toys or a means of transport for poor people to move.

Forester (2012) states that “In America, the home of the car, since some time about the 1930s, all the cyclists have been considered to be children.”, then “The motorist dominated institutions wrote laws that treated cyclists as children, and then designed and built bikeways designed for childish operation". Pochet and Cusset studying cultural barriers to bicycle use in Western African cities affirm that “the bicycle is deemed dangerous in traffic, less efficient, and most of all is perceived as the transport mode of the poor" (Pochet; Cusset, 1999). Unfortunately, the same claim can be seen in several countries, developed and developing.

Nevertheless, the demands of this century for sustainable urban transport in cities and the cult of a healthier way of life have been starting to change our perception regarding bicycle use (Chen et al., 2022). One of these changes is the idea of an inversion of the traffic pyramid where active Mobility, such as walkability and cycling, should be prioritized by city governments suggested by Bike Innovation Lab in Denmark (Freudendal Pedersen, 2015). Brazil is an example of a country that decided to include this concept in its law regarding urban mobility (Brasil, 2012).

At the same time, many have been discovering that bicycles are a form of pleasure and a very healthy exercise. This way, several government agencies, and public health organizations advocated bicycle use as a way to improve individual health while appropriate infrastructure, traffic calming, training, and education programs, are supportive measures to facilitate bicycling (Pucher; Dill; Handy, 2010). Moreover, the Pandemic of COVID-19 had a profound impact in world society, and bicycle use exploded during the social distancing process (Teixeira; Silva; Sá, 2022).

This transformation has a strict impact on the industry and logistics activities. According to Vitkauskaitė and Vaičiukynaitė (2020) in the wake of COVID-19 prevention measures, bicycles, and e-scooters became encouraged transportation means to allow individual and non-crowded outdoor transit compared to other public transportation means. Pase et al. (2020) point out that due to the Pandemic crises, several cities started looking at cycling as a health, environmental, and social distancing friendly solution. However, this increase in demand levels together with restrictions affected the bicycle industry which had many issues to deal with severe shortages (Mann, 2022). Indeed, the Pandemic of COVID-19 only highlighted an ongoing transformation in transport modes in cities (Taillandier; Dijk; Vialleix, 2023).

In Brazil, it was not different and in the last two decades new companies have arisen, the old ones transformed, and international brands saw in the market a good opportunity the expand their business. This way, important brands such as Specialized and Trek passed on to run operations directly in Brazil importing their goods without local distributors. Local brands such as Sense, Oggi, Soul, and Audax took an important market share competing in equal modes with the international ones and sponsoring teams and athletes to expose their brands and goods.

One important action to this level of competition was Brazilian manufacturers adopting the Manuas Industrial Pole (MIP) as a local of production. Manaus is a free trade tariff zone, and companies can import their parts with the reduction of taxes which allows them to improve the quality of their products and compete with international brands. However, Manaus is far from the main consumer markets inside the country which implies logistics issues and generates additional costs.

In this study, we evaluate the bicycle production of Brazilian companies operating in MIP and compare it with import ones to check whether the supply chain management strategies using a network production far from consumption markets have been producing the desirable effects on the country's industry.

This paper is divided into sections, after the introduction, we present the methodology aspects. In section 3, we show the results and make some discussions, and in section 5, we expose our conclusions of the study.

2 THEORICAL BACKGROUND AND METHOD

To perform this study, we investigated whether the bicycle industry in Brazil located in Manaus Industrial Pole (MIP) produced advantages for Bicycle Brazilian companies against imported equipment. MIP is a strategic zone of production where the Brazilian government - with the intention of providing enrichment for the North Region that is economically deficient - drops or eliminates several tariffs for import supplies since the company manufactures in Manaus, Amazonas state.

The first step of the research consisted of obtaining knowledge regarding the Bicycle Industry in MIP. To do so, we explored data from Associação Brasileira dos Fabricantes de Motocicletas, Ciclomotores, Motonetas, Bicicletas e Similares – Abraciclo (Mann, 2022), an association that includes the companies of bicycle and motorcycle manufacturing in Manaus.

We obtained the production volume between 2014 and 2023, and companies information data. Moreover, we mapped all the industries as a way of dimensioning the role of companies in MIP concerning the Brazilian production scenario from Aliança Bike (Brazilian Association of Bicycle Sector).

The second step of the research was to establish Brazilian bicycle demand to have a comprehension of the market size. We obtained the demand between 2018-2023 from Aliança Bike. After, we collected data from imported bikes that was available between 2011 and 2022 from Aliança Bike as well (Aliança Bike, 2024).

The comparison of production and imported bicycles was made using a temporal series connecting the same period for both data: 2014 – 2022. Based on the literature and market knowledge of the researchers, we discuss possible insights into the reason for these results.

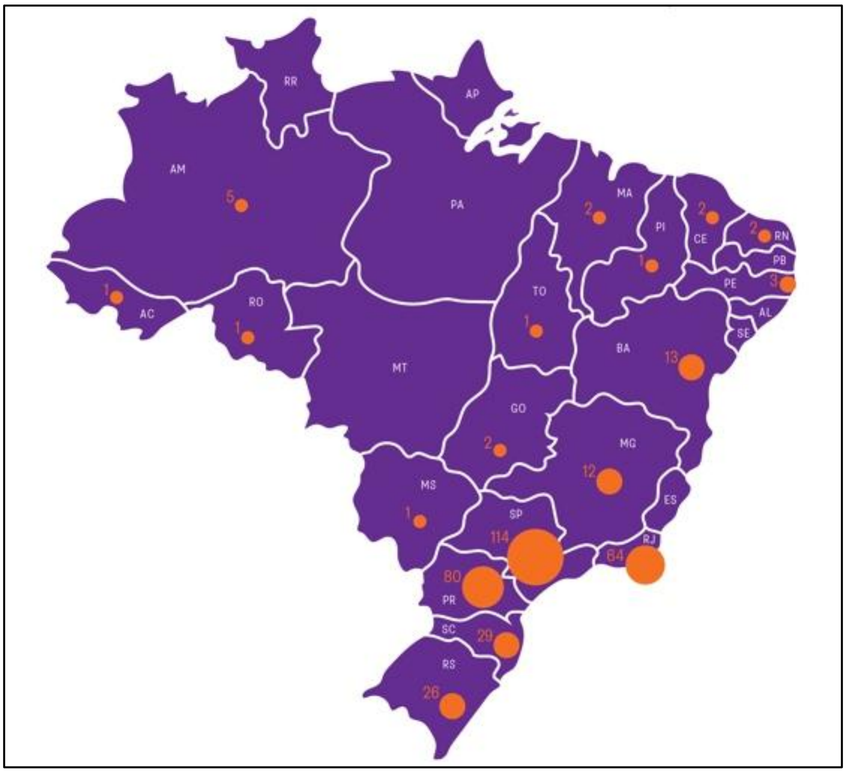
3 RESULTS AND DISCUSSION

The results and discussion section begins with an overview of the Brazilian bicycle industry.

3.1 Brazilian Bike Industry

The bicycle industry is a vital sector for Brazil's production, and we can find manufacturers of equipment and parts in many states, Figure 1.

Figure 1 – Bicycle industry in Brazil (equipment and parts)

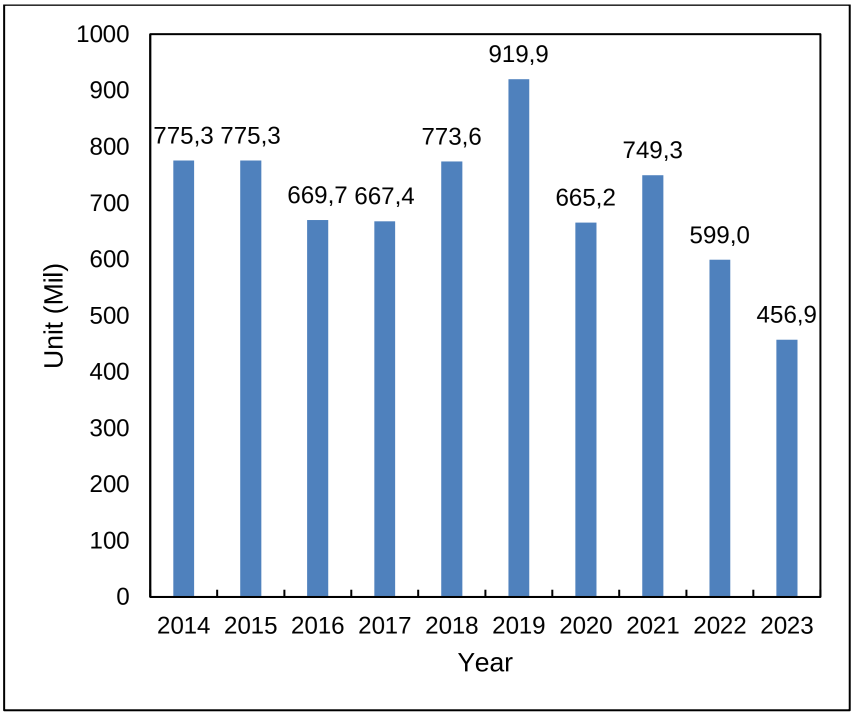


Source: Aliança Bike (2024)

Nevertheless, this market suffers fierce competition from international manufacturers that affects direct production in the country. Moreover, all global companies depend on spare parts and raw materials provided by a small group of suppliers directly. To mitigate this impact, the Manaus Industrial Pole (MIP) has been used as an alternative for the main manufacturer players to compete with the foreign companies, because receives a reduction of import tariffs of parts and raw materials used to build Brazilian bikes.

Even though it is an important action this has effects on internal logistics distribution because Manaus is far from the main poles of consumption inside the country. The Southeast region that received 56% of production in 2023 (G1, 2024) is located around 4,000 kilometers far from Manaus. The production of bicycles in MIP between 2015 and 2023 can be seen in Figure 2.

Figure 2 – Bicycles Manufactured in Manaus Production Pole, Brazil from 2014 to 2023



Source: Abraciclo (2023)

Four main companies manufacture bicycles in MIP (Abraciclo, 2024):

a) Audax: the company belongs to Claudino Group founded in Teresina, the capital of the state of Piaui at the end of the 1990s. With more than 20 years on the market, the manufacturer today has the largest bicycle industry in the Americas in its segment, producing in its own park industrial, most of the parts it uses.

b) Sense Bike: the company is the bicycle brands division of Grupo Lagoa Participações. In 2018, the company acquired Swift Carbon, a South African manufacturer specializing in the development and production of carbon fiber bicycles. Sense Bike was established in 2009 to offer bicycles capable of enchanting through a positive cycling experience.

c) Caloi: the company is a 124-year-old Brazilian bicycle brand operating in segments, from children's products to performance. The company is part of Pon Holdings, a Dutch group that is the world leader in the bicycle market and owns more than 20 global bicycle brands such as Cannondale, Schwinn, Mongoose, GT, Focus, Santa Cruz, Gazelle, and Cervélo.

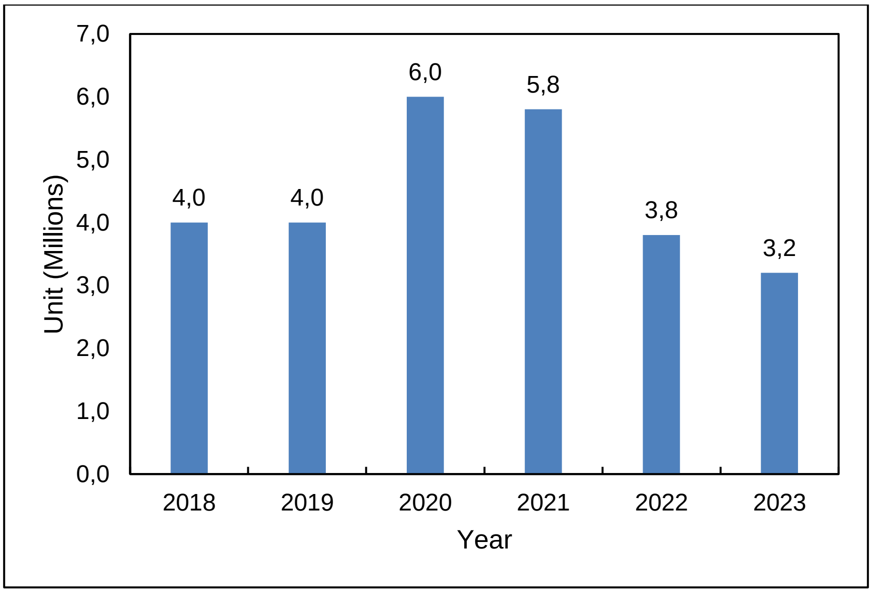
d) Oggi: the company is among the biggest brands on the market and has a large share of the specialized market, with development and manufacturing in the Manaus Free Trade Zone, imported parts and components. Established in 2014, the brand's project was born in Italy and was created by Italian designers passionate about the world of bikes. The entire development and manufacturing process is carried out in our factory in the Manaus Free Trade Zone.

3.2 Bicycle Demand in Brazil

The demand for bicycles in Brazil was stable until the effects of social distancing during the Pandemic of COVID-19 boosted the demand out of scale. However, the return to society to a regular way of living provoke a descent in values before the Pandemic period, Figure 3.

During social distancing, people saw it without options means of fitness activities and bicycles appeared as an alternative to maintaining a certain level of exercise. At the same time, people who needed to keep working during the Pandemic saw bicycles as a way to avoid crowded transportation and the reduction of cars on streets contributed to a higher level of security on the bicycle displacements.

Figure 3 – Bicycle Demand in Brazil between 2018 and 2023



Source: Aliança Bike (2024)

The effects were immediate on demand and price scale. This is not only due to that but also to cargo transport restrictions, closed manufactures, and low raw material available.

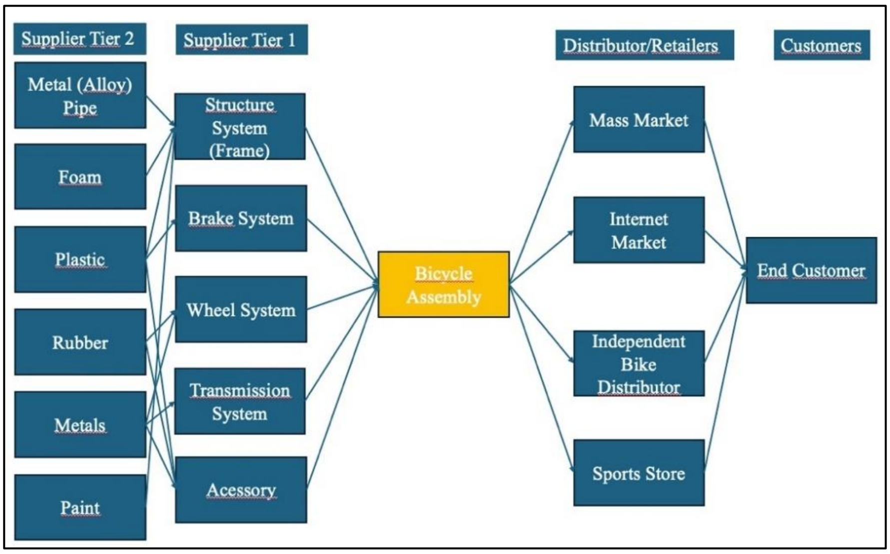
After that, many did not adapt to cycling activity and decided to sell their bicycles for low prices. At the same time, the higher prices of new products move consumers to these second-hand products affecting the demand for new ones. This scenario provokes a reduction in prices once companies motivated to their peak during the Pandemic increased their production.

The current situation in the country is a high demand for more specialized bikes, estimated to sport competition, while the simpler ones dedicated to urban mobility remain expensive for a great part of the workforce class. In this context, every stakeholder is losing.

3.3 Comparing the Imported Bicycle Volume with MIP Production

A typical bicycle industry supply chain is represented in Figure 4.

Figure 4 - A Typical Bicycle Supply Chain

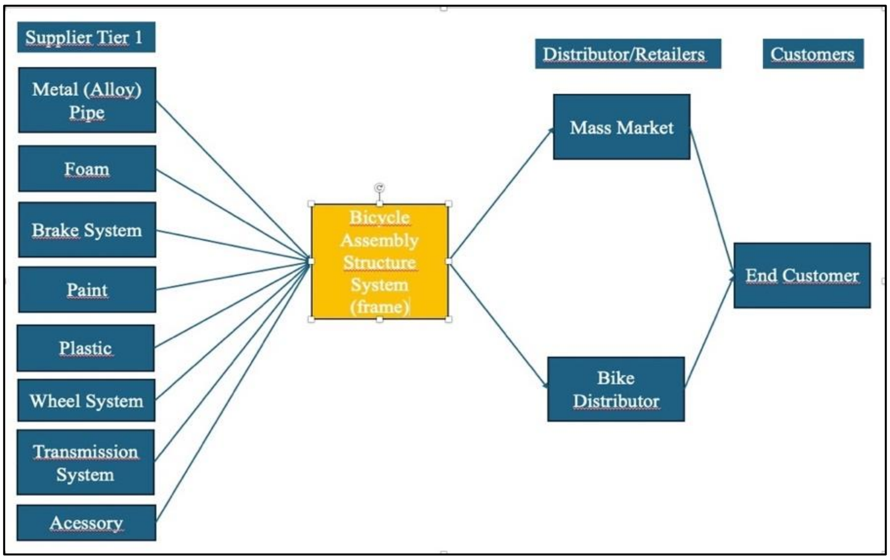


Source: Authors (2024)

Usually, the bicycle industry assembles the components in a plant that is a supplier for a few companies worldwide. The transmission system, for instance, Shimano has 70% of the global share in bicycle gears (Digital Initiative, 2024). For this reason, there is a low margin for assembly companies to negotiate or block competition for the same resources. Finally, bicycles can reach consumers through different approaches such as mass markets (hypermarkets, department stores), direct sales using the internet, an independent bike distributor, or a store specialised in sports.

From Brazilian companies in this study, we can suggest a modification to this model, Figure 5.

Figure 5 – A Typical Brazilian Bicycle Supply Chain



Source: Authors (2024)

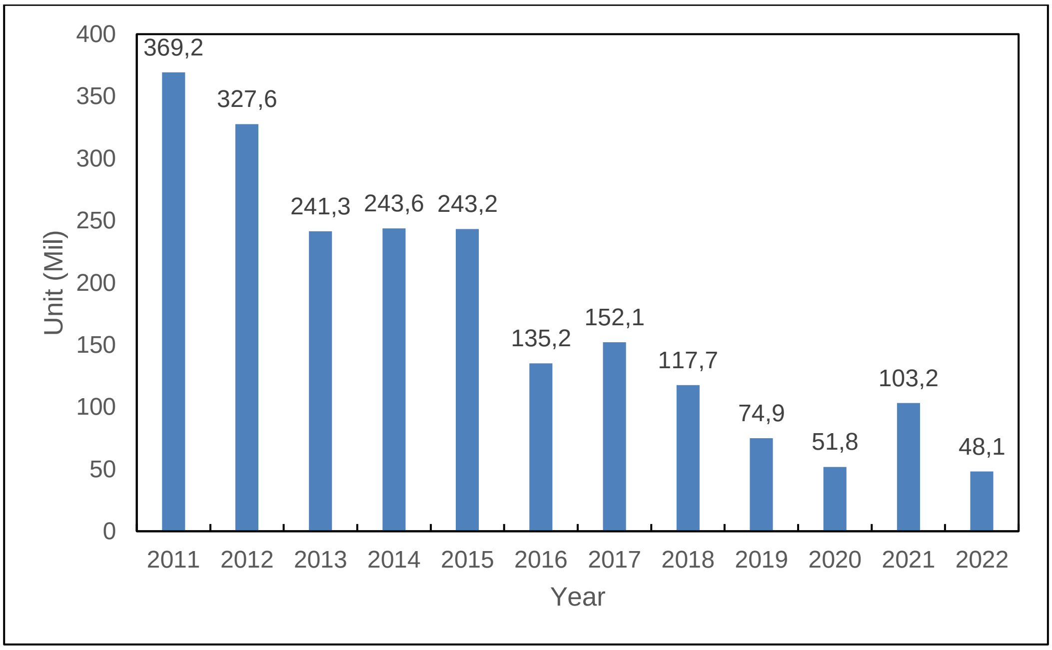
The Brazilian companies in this study usually adopt this new configuration of networks. The factory produces the frames and assembles the bicycles, moving to the mass market that here include general sports stores such as Decathlon and Centauro – The first is a French retailer that offers its own brand products, imported in case of sophisticated products such as carbon frame bikes and using one Brazilian partnerships (Oggi) to produces their frames in local market.

These massmarket retailers have a final assembly service that facilitates commercialization. In the case of Decathlon, they provide mechanical low-cost service and an unlimited guarantee of frames. However, to deal with this customer service, the manufacturers in MIP have agreements with different small stores and mechanical services to deliver and finalize the assembly of bicycles. Despite of success of Internet sales, the market in Brazil is highly dependent on bike shops.

The number of bicycles imported in Brazil can be seen in Figure 6.

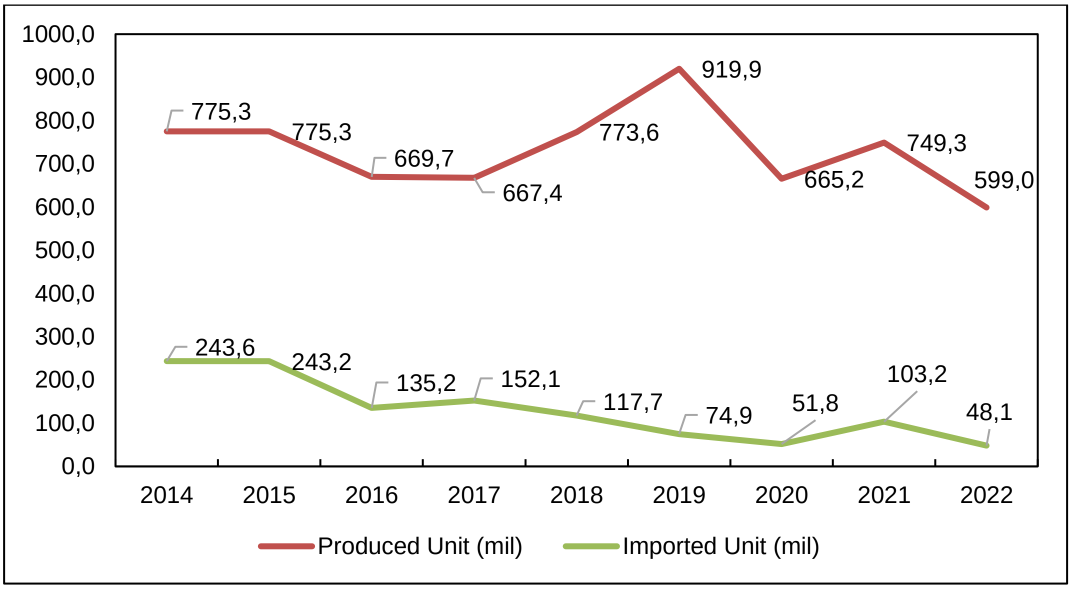
Note that volumes of imported bicycles have fallen over the years. In 2021, it was atypical because reflected the rising demand during the Pandemic COVID-19 period. The bicycle imported refers to competition equipment and International Brands' participation. The volumes of imported and manufactured bicycles in MIP can be compared in temporal series in Figure 7.

Figure 6 – Bicycles imported and commercialized in Brazil between 2011 to 2022



Source: Authors (2024)

Figure 7 – Comparison of Bicycle Production in Manaus Industrial Pole and Number of Imported Bicycles for the same period (2014-2022)



Source: Authors (2024)

As can be seen in Figure 7, the volume during the Pandemic COVID-19 has the same behavior for MIP production, and the imported sector, increased in both segments. Before this period the volume increased in internal production and demand for imported bicycles decreased. After 2021, the demand for imported bicycles seems decreased to a higher level, 53.4%, while internal production reduced by 20%. According to Aliança Bike Director Daniel Guth "Brazil had a low capacity to retain and build customer loyalty during the pandemic" (Revista Oeste, 2024).

We can infer that despite logistics issues in moving goods from Manaus to the main markets of consumption, manufacturer establishment in the region to obtain reductions in tariffs of components imported represented an excellent option for Brazilian manufacturers.

When companies install in the MIP (Brasil, 1967), companies receive an exemption or reduction in:

1. import Tariffs (II);
2. exemption from Export Tax (IE);
3. exemption or credit from Tariffs on Industrialized Products (IPI);
4. 75% reduction in Corporate Income Tax (IRPJ);
5. exemption, credit or refund of Tax on Circulation of Goods and Services in the state (ICMS);
6. 10-year exemption from IPTU (Tax on Property, Urban Territory), public cleaning and conservation service fee and operating license fee.

Local companies can also use bike distributors, independent for those that offer many brands or for dedicated distributors of the franchise – as in the case of Sense Bike. These companies did not offer their products directly on the Internet, only using store channels – many companies fear that selling by the Internet can frustrate the experience of the consumer because he/she can buy the wrong product and make the experience of cycling painful.

International brands have different strategies. Trek only offers the products using registered bike shops, and the Specialized uses the websites and distributors. Companies offer in their portfolio bicycles of carbon and aluminium frames, both imported. Local ones, otherwise, produce aluminium frames and import carbon ones.

We can conclude that Brazilian companies are preferable for consumers who seek an excellent bicycle to a cost more compatible with the currency country's reality. While enthusiasts and sports athletes (Amateur and Professional) prefer International Brands. The International Brands offer entry-level excellent bikes but with components inferior to those offered by local companies for the same price, hence, clients need to choose between a brand of international reference or bet in a local with better cost-benefits.

Otherwise, regarding expensive bikes of competition, the scenario is the opposite, and clients tend to trust more international brands. However, local companies are trying to reduce this gap, improving their products to the professional level or creating different brands for different segments. This is the case of Sense, which produces high-level products using the South Africa brand acquired Swift Carbon, or Audax which produces the entry-level product in a generic brand called Houston.

4 FINAL CONSIDERATIONS

The present article studied the Brazilian bicycle supply chain in Manaus Industrial Pole, a free trade tariff zone, on the production and competition of these companies with international brands inside Brazil's market. The results indicate that although the factory installation in Manaus brings logistics challenges and issues to companies, the historical series confirms the favorable effects on competition of those industries against international brands.

New studies will be necessary to evaluate the impacts of logistics costs. However, we could verify in this study the relevance of these new supply chain alignments to improve the participation of Brazilian industries in the internal bicycle market. Moreover, we confirmed that those companies are competing not only in basic models but are facing competition for more sophisticated products.

Despite the market shrinking after the huge expansion in the Pandemic COVID-19 years (2020/2021), the motivation to adopt the bicycle as urban transport increased. Due to the awareness of drivers, infrastructure, and public policies align with an increase of interest in competition practices in sports such as Cycling and Mountain Bike has produced a significant market that maintains a demand higher than 3 million that call the attention of companies in this sector worldwide.

Therefore, producing policies to incentivize the industry sector seems an important measure to ensure Brazilian companies' participation in the market and offer products more closely to the financial condition of the workforce and middle classes in the country.

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