



 OVERHAUL

Brazil Annual Report 2022



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Executive Summary

Cargo theft in Brazil continues to disrupt and harm various industries, from Food and Beverages to Electronics. The country has been at the center of an increase in criminal activity, which threatens to worsen in 2023. Recent recovery efforts from COVID-19 have further unsettled the ecosystem, leading to a spike in thefts that closely matches pre-pandemic numbers, and might soon surpass them.

Overhaul's 2022 Annual Report is meant to highlight the ways in which cargo theft events in Brazil are evolving. This understanding is critical in order to help shippers and drivers prepare for and avoid risks. To that end, it is our goal to provide an overview of what cargo theft in Brazil will look like in 2023 based on patterns witnessed in 2022.

In order to conduct our analysis, Overhaul compiled data concerning which locations in Brazil were most susceptible to theft. We also looked at the days and times that experienced the greatest number of thefts, as well as what types of products were taken. Finally, we analyzed whether the thefts occurred at a facility, stopped unit, or unit in transit.

We then performed a deep dive into specific focus areas for Brazil, specifically concerning cargo theft in the Southeast and thefts that involved stopped units. We discovered that increases in cargo movement in 2022 corresponded with increases in theft, and the regions in which these events took place significantly narrowed. Most theft events took place in the Southeast region, specifically in São Paulo (38%), Rio de Janeiro (31%), and Minas Gerais (7%). Miscellaneous (53%) products were at the highest risk for theft in Brazil, followed by Food and Beverages (19%), Tobacco (7%), and Electronics (5%).

In 2023, cargo theft events in Brazil are expected to jump from 16,331 to 18,038. These numbers show definitively that cargo theft must be taken seriously, and the range of affected industries and times in which an attack may occur highlight how important it is to have the right tools and technology to keep your shipments safe.

We hope this report helps you better understand the cargo theft patterns experienced by Brazil during 2022 and how this data has informed Overhaul's predictions for 2023. In turn, these predictions can help you better plan your shipping routes and outfit your carriers with the electronic security and real-time monitoring solutions to best protect your cargo.

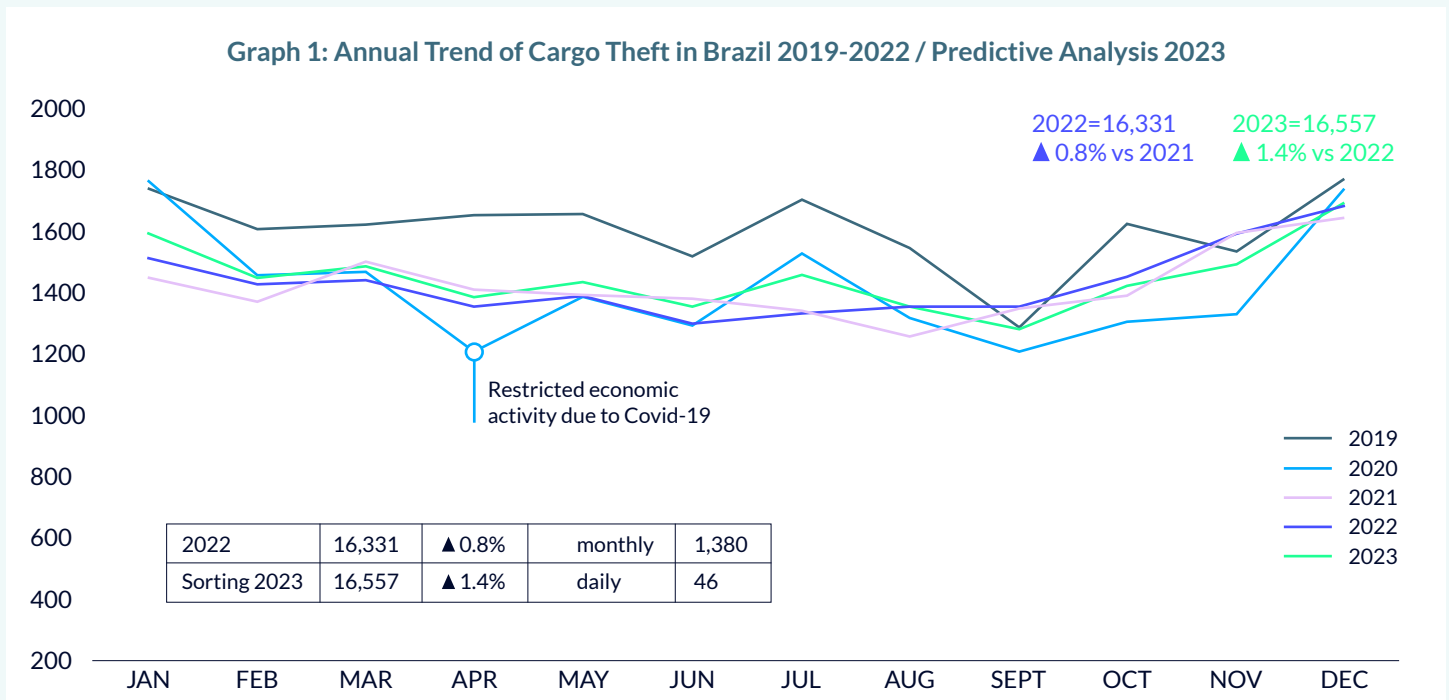




Brazil: 2022 Cargo Theft Report

Based on our records and official government data, the Overhaul Intelligence Center estimates that 16,331 instances of cargo theft occurred in Brazil in 2022. On average, there were 1,380 monthly cargo thefts and 4.6 thefts daily. This represents an increase of 0.8% compared to 2021. In contrast, 2020 showed a decrease of 13.9% followed by a slight increase of 0.7% in 2021, as observed in **Graph 1**.

In a stable scenario, the time series analysis prepared by Overhaul suggests that cargo theft nationwide will increase by 1.4%. In a pessimistic scenario, an increase of 10 is predicted. At a 5% increase, this estimate of 18,038 thefts by 2023 would be just 3.5% below the events recorded in 2019.

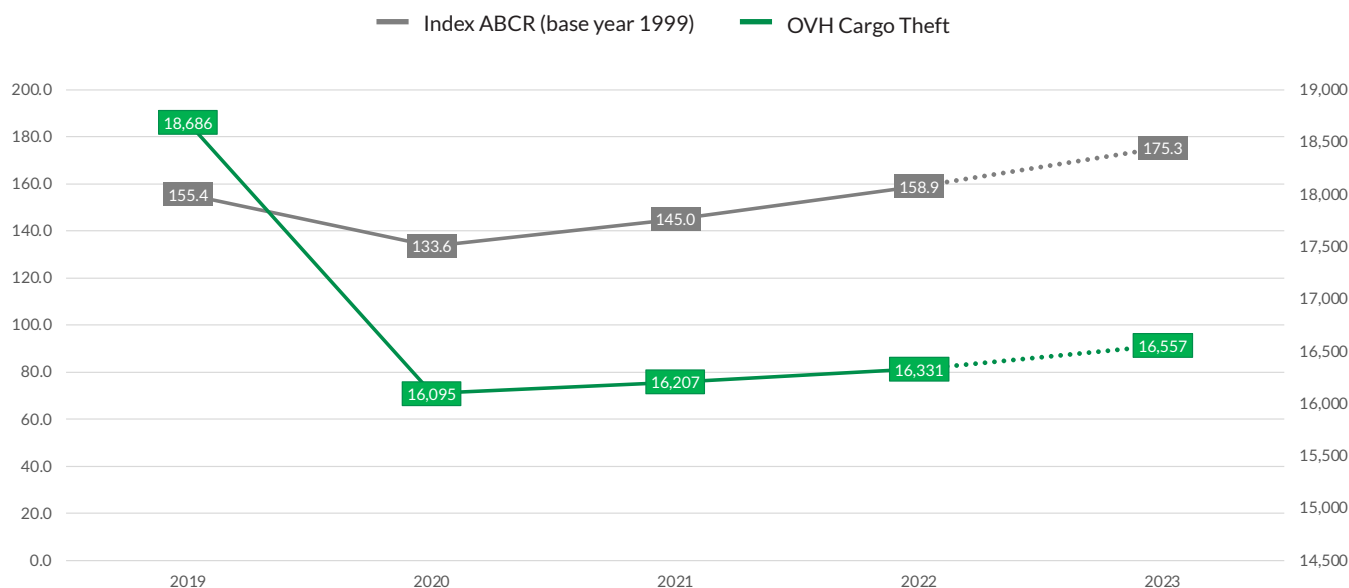


One variable that explains Brazil's increase in cargo theft during 2022 is the increase in cargo movement. The main modality of goods movement in Brazil is by road. In 2019, the ABCR Index of Highway Cargo Movement showed an increase of 3.5% compared to 2018 with a value of 155.4. However, for 2020 it showed a decrease of 14.0%, dropping to 133.6 due to restrictions imposed by the COVID-19 pandemic. In 2021, the economic reopening allowed the index to increase by 8.6%, followed by 9.6% in 2022. Between November 2022 and December 2022, the index increased yet again by 13.3% from 151.54 to 171.71. This upward trend continued during January 2023 with an index of 173.89, and this increase is expected to carry on throughout 2023.

Cargo theft events reported by Overhaul in Brazil for 2022 followed the same upward behavior. The annual trend of both variables is seen in **Graph 2**. There is a correlation of 48.8% when comparing the period from 2019 to 2022 and a 99.2% correlation from 2021 to the 2023 projection, corresponding with the post-pandemic economic reactivation.



Graph 2: Yearly comparison 2019 - Projection 2023 Cargo Theft Trends vs. ABCR Index (base year 1999)



Source: Prepared by the author using data from the ABCR Index with base year 1999 and from Overhaul Intelligence Center.
Based on the ABCR Index from 1999 to 2022,

Spatial and Temporal Analysis of Cargo Theft in Brazil

At the national level, a spatial analysis of our data shows a 1.7% reduction in the territorial area in which 68.3% of cargo theft crimes occurred in Brazil, which went from 7.4% to 5.7% between 2021 and 2022. That is, two out of three crimes in 2022 occurred in 5.7% of the national territory.

If this trend continues, 68.3% of cargo robberies in 2023 will occur in less than 5.7% of the national territory. This means that the number of crimes is growing and concentrating in an increasingly smaller space near the Southeast, particularly in the states of São Paulo and Rio de Janeiro. In 2023, at least 71% of cargo theft crimes at the national level will be present in these two states, according to Overhaul's prospective analysis.



By dividing the country into quadrants as seen on the map above, it was identified that 89% of cargo thefts are concentrated in Quadrant 4 (C4), which includes the states of São Paulo, Rio de Janeiro, Minas Gerais, Paraná, Rio Grande do Sul, and Goiás.

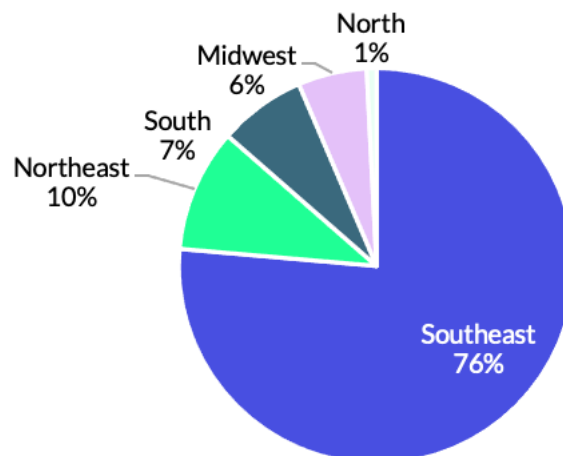


Regional Analysis

In 2022, Brazil's 0.8% increase in cargo theft was reflected mainly in the Southeast region, with a variation of three percentage points compared to 2021, from 73% to 76%. The three states that presented the highest risk of theft during the year are in this region: São Paulo (38%), Rio de Janeiro (31%), and Minas Gerais (7%).

Source: Own development with data from Overhaul Intelligence Center

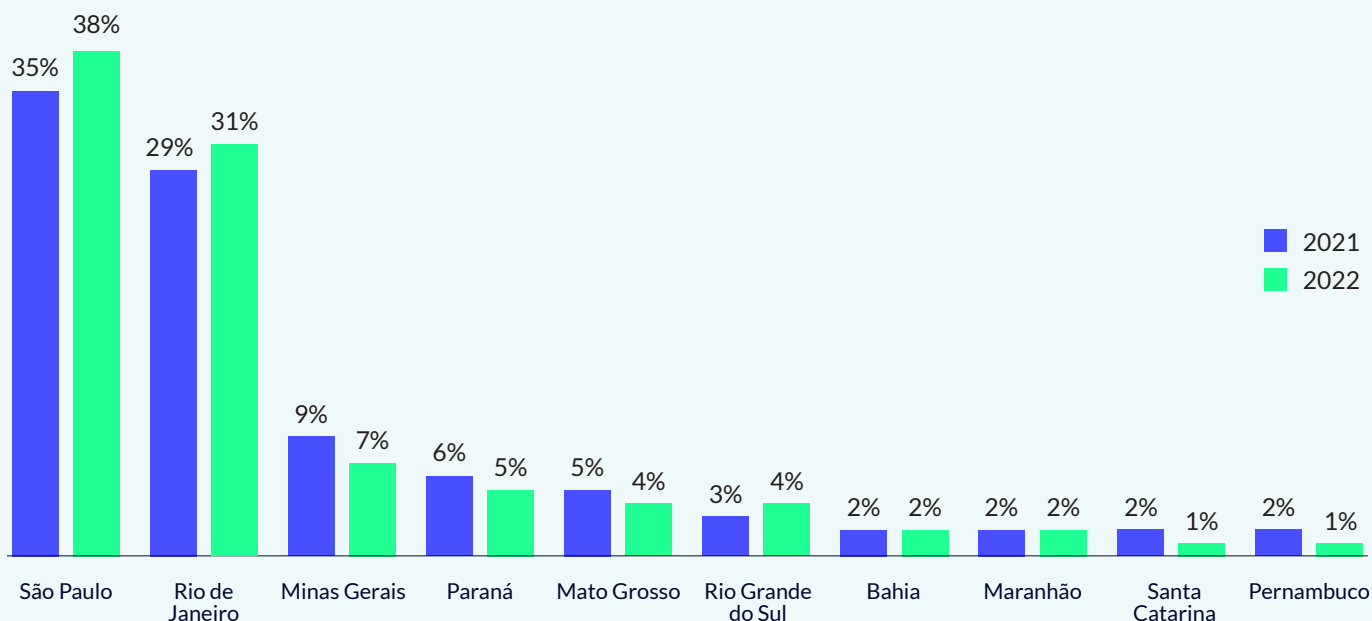
Graph 3: Cargo Thefts by Region 2022



Analysis of the 10 States with the Highest Number of Cargo Thefts

The states of São Paulo and Rio de Janeiro accounted for 69% of all thefts at a national level. Since 2015, these two states have presented the highest risk of theft to carriers. A percentage increase of 3 points was observed for São Paulo and 2 points for Rio de Janeiro. This corroborates the 1.7% contraction in the surface area (5.7%) in which 68.3% of cargo theft incidents in Brazil were concentrated. 97% of the thefts in the country were concentrated in the states shown in **Graph 4**.

Graph 4: Brazil Cargo Theft by State

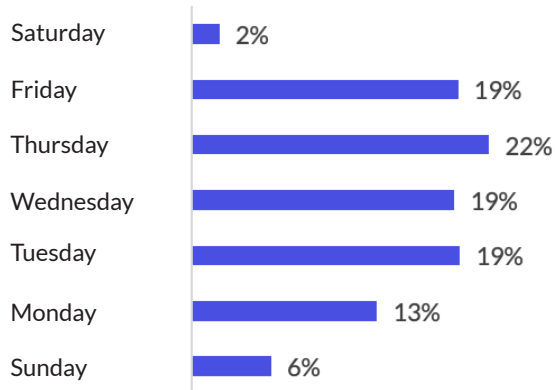




Thefts Per Day & Hour

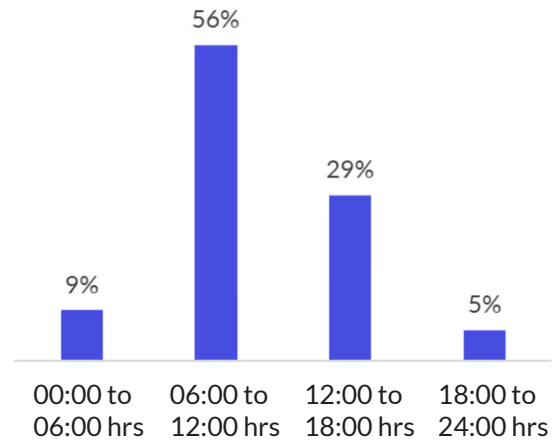
During 2022, cargo theft events in Brazil predominated on workdays (Monday through Friday), with Thursday presenting the highest risk at 22%. In 2021, the distribution of thefts by day was even from Tuesday to Thursday, with 19% of incidents occurring on each of these days. In addition, the greatest movement of cargo occurred on weekdays.

Graph 5: Cargo Theft by Day of the Week 2022



Source: Own development with data from Overhaul Intelligence Center

Graph 6: Cargo Theft in Brazil by Hours 2022



Source: Own development with data from Overhaul Intelligence Center

As for timetables, the pattern remained similar to that of 2021. The highest risk of cargo theft was in the morning between 6:00 a.m. and 12:00 p.m. at 56%, representing an increase of three percentage points. Thefts occurring in the afternoon between 12:00 p.m. and 6:00 p.m. showed a decrease of three percentage points compared to the previous year, while the evening hours between 6:00 p.m. and 12:00 a.m. recorded an increase of two percentage points. The early mornings between midnight and 6:00 a.m. saw an increase of one percentage point.



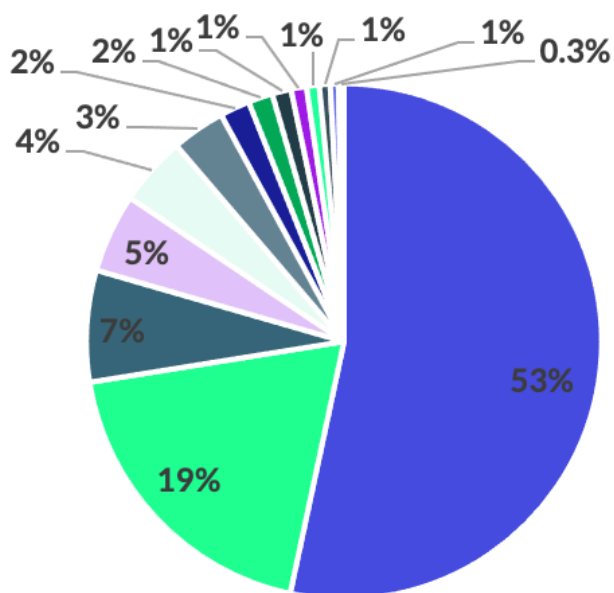


Theft by Product Type

In 2022, Miscellaneous was the most stolen product type in Brazil, registering 53% of total thefts, up 4% from 2021. In second place was Food and Drink with 19%. In this category, the Meat industry stands out as having the highest incidence of theft. Tobacco came in third place with 7%, composed mainly of cigarette theft. Electronics ranked fourth with 5%, with computers being the most stolen products within this category.

- Miscellaneous
- Food & Drink
- Tobacco
- Electronics
- Auto & Parts
- Agro
- Pharmaceuticals
- Alcohol
- Fuel
- Building & Industrial
- Home & Garden
- Metals
- Clothes & Shoes
- Personal Care

Graph 7: Cargo Theft in Brazil by Type of Product



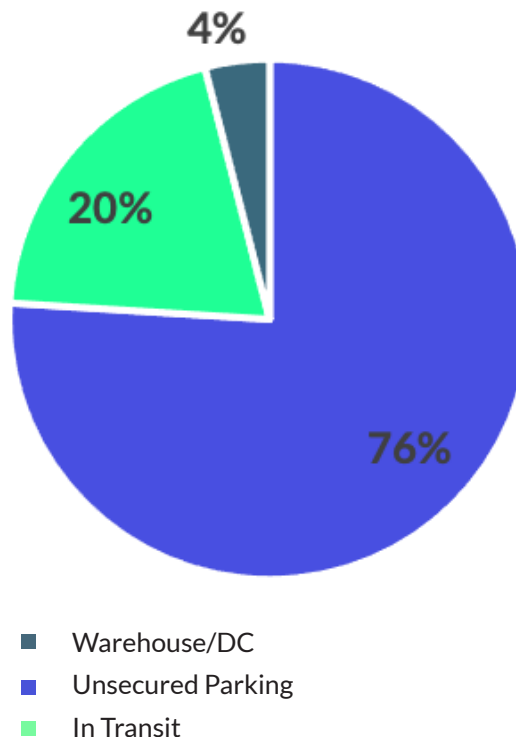
Theft by Type of Location

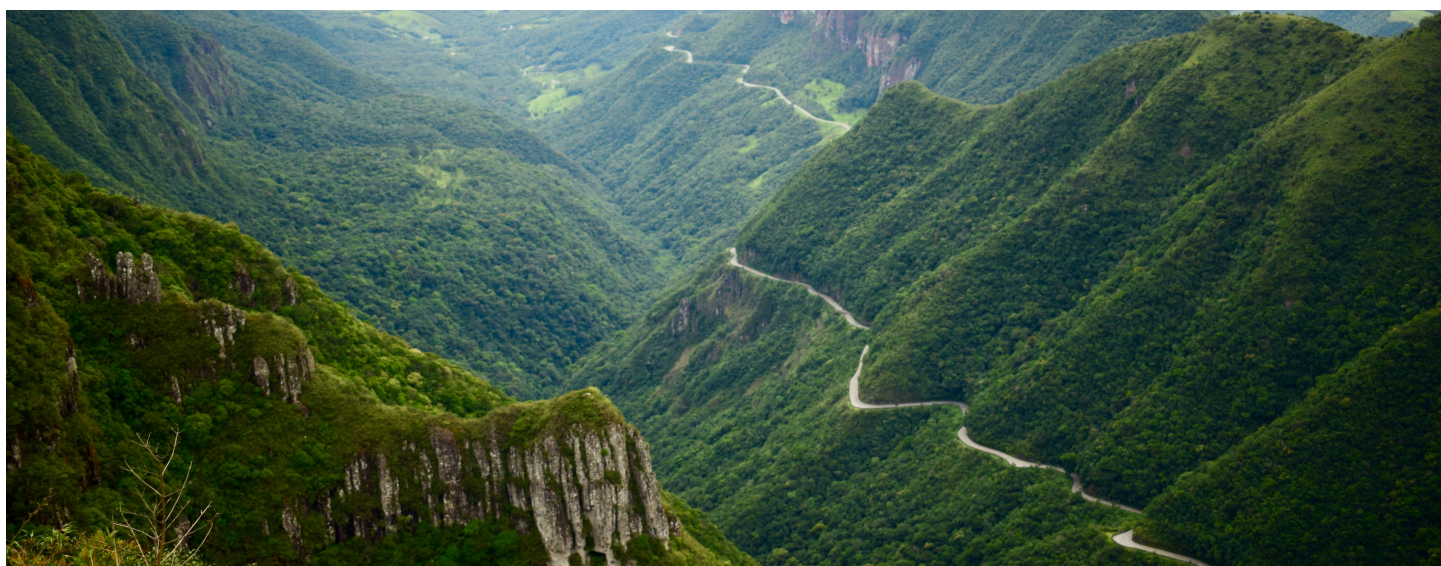
In 2022, 76% of all cargo thefts in Brazil involved stopped units in unsecured parking. Cargo theft from stopped units moved from second to first position between 2021 and 2022, increasing from 42% to 76%.

Theft of units in transit was the second most used mode of operation by criminals in 2022 at 20%. Faced with the response of police and different associations in Brazil against cargo theft, criminal groups have sought to sophisticate the methods used to commit theft, as well as increase their criminal capacity and state of strength. Along with cargo theft, these new tactics will likely lead to an increase in the theft of trucks, trailers, and vans, since these vehicles will be subsequently used to carry out cargo theft.

Theft inside facilities is becoming more and more frequent. In this type of theft, the criminals neutralize security guards and electronic security, sometimes forcing the employees to load units with stolen products. On average, a robbery inside a facility lasts between three and five hours.

Graph 8: Cargo Theft in Brazil by Location





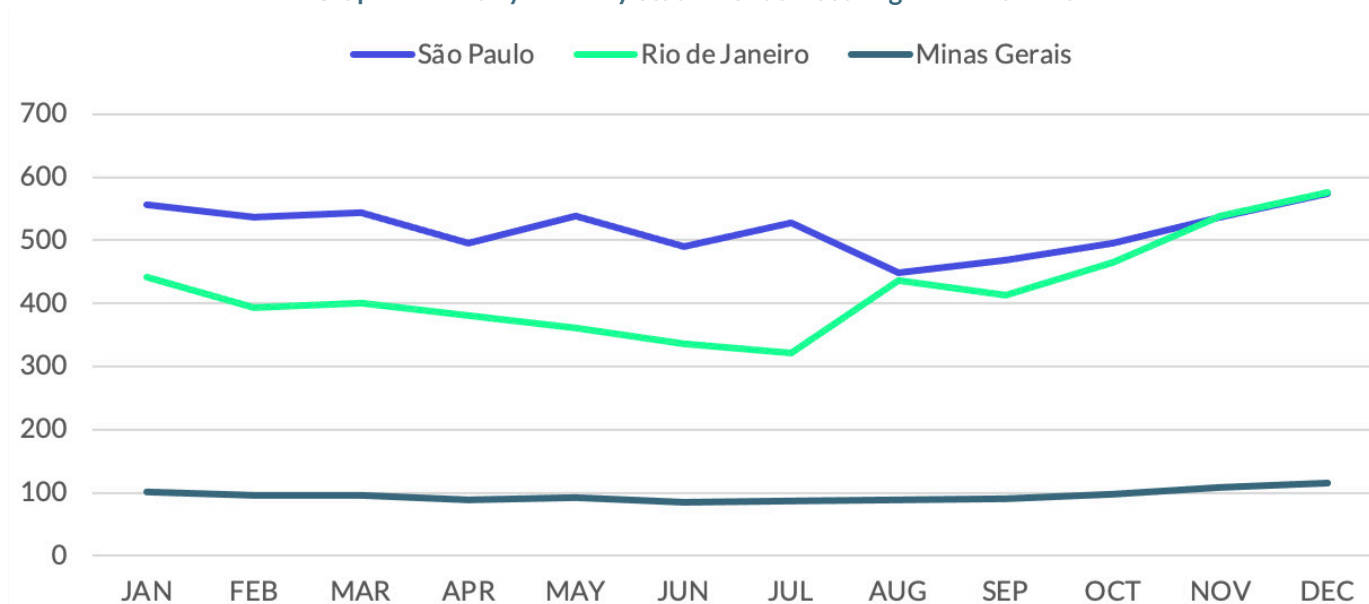
Special Report 2022

The Overhaul Intelligence Center decided to do a special report on Brazil's Southeast region and cases of stopped unit theft, as both registered substantial growth during 2022. 76% of cargo thefts in Brazil were concentrated in the Southeast region, up three percentage points from 2021. Theft of stopped units was positioned in 2022 as the main modality of operation used by criminals in Brazil, occurring 76% of the time.

Cargo Theft in the Southeast Region

In 2022, 76% of cargo theft events in Brazil occurred in the Southeast region, marking a three percent increase from 2021. The states with the highest risk in this region were São Paulo (38%), Rio de Janeiro (31%), and Minas Gerais (7%). Another state that is part of this region is Espírito Santo, which accounted for only 0.6% of cargo thefts in the whole country.

Graph 9: Monthly Trend by State in Southeast Region in Brazil 2022

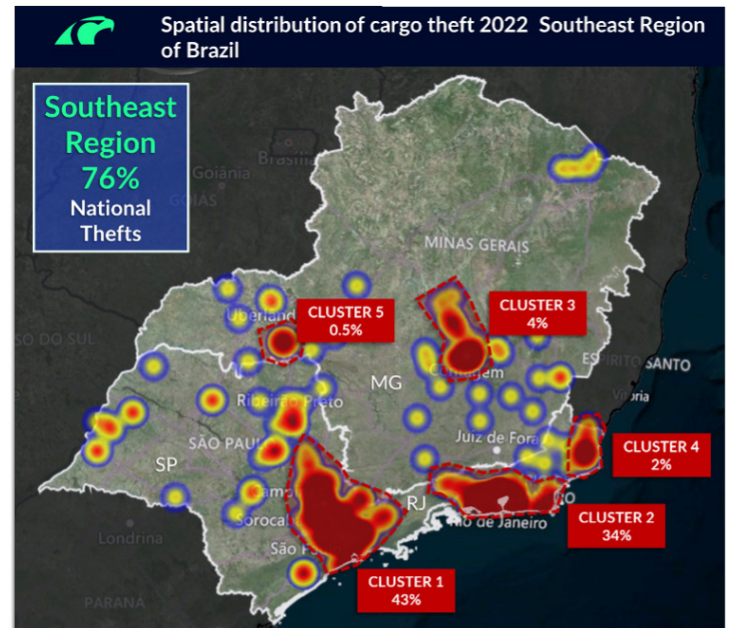




Based on the space-time statistics of the Overhaul Intelligence Center, 7.4% of thefts in the Southeast region were concentrated in urban areas. The mesoregions with the highest number of incidents in 2022 corresponded to the capital city of São Paulo (2.9%), the capital city of Rio de Janeiro (22%), Greater São Paulo (20%), and Baixada Fluminense (15%). During 2023, the highest risk should continue to occur in the capital cities of São Paulo and Rio de Janeiro.

The most stolen product type in the Southeast region was Miscellaneous at 59%, followed by Food and Beverages (1.6%). 50% of the thefts occurred in the morning between 6:00 a.m. and 12:00 p.m. The highest percentage of criminal activities occurred on weekdays, with 62% occurring between Tuesday and Thursday.

In São Paulo, the roads that presented the highest risk were BR-050, BR-116, SP-270, and BR-381. In Rio de Janeiro, the roads were Avenida Brasil and Rodovia Washington Luiz. In Minas Gerais, the road was BR-040.



Stopped Unit Theft

Theft of stopped units represented 76% of all cargo thefts in Brazil, becoming the main mode of operation in 2022. This category increased considerably from 42% to 76% compared to 2021. 60% of all stopped unit thefts were concentrated in the states of São Paulo (32%), Rio de Janeiro (10%), Mato Grosso (9%), and Paraná (8%). 47% of these thefts occurred when the units were stopped on highways, 41% when they were stopped on streets, and 12% in truck stops/service stations.

It should be noted that 63% of the cargo theft events occurred in the mornings between 6:00 a.m. and 12:00 p.m. The roads that presented the highest risk of stopped unit theft were BR-381, BR-040, BR-163, and BR-116.





Recommendations

The Overhaul Intelligence Center considers Brazil to be a SEVERE cargo theft risk entity, due to the use of violence by criminal groups and the high concentration of crime, especially in the Southeast region. Therefore, it is advised that cargo vehicle operators traveling through Brazil take extreme precautions and remain alert throughout the trip, especially in areas of high risk and loss of signal. In addition, it is recommended to use layers of electronic security with real-time monitoring, which enable risk mitigation and increase the possibility of cargo recovery in case of theft.

Drivers should receive defensive driver training and be instructed on how to identify risky situations on the road, such as suspicious people and vehicles, which should be reported to the Monitoring Center. Likewise, it is advisable that transportation be carried out during the daytime and that loading units be kept in good mechanical condition. Lastly, drivers should travel on routes with previously defined detention points based on a risk analysis.

