

Lloyd's City Risk Index 2015-2025

Analysing the economic exposure from 18 threats over ten years from 2015

Understand the risks: www.lloyds.com

Rio de Janeiro, Brazil

Average GDP growth rate: 4.07%

Average annual GDP: \$260.91bn*

Total GDP@Risk: \$24.32bn

Share of Average annual GDP: 9.32%

GDP@Risk ranking

Global: 51 Regional: 8 National: 2

GDP@Risk by threat type

Threat	GDP@Risk	Share of Total GDP@Risk
Market crash	\$6.18bn	25.43%
Human pandemic	\$5.14bn	21.13%
Cyber attack	\$3.69bn	15.19%
Flood	\$3.55bn	14.58%
Oil price shock	\$3.10bn	12.74%
Sovereign default	\$0.87bn	3.58%
Power outage	\$0.60bn	2.48%
Solar storm	\$0.40bn	1.65%
Plant epidemic	\$0.38bn	1.55%
Terrorism	\$0.36bn	1.46%
Nuclear accident	\$0.05bn	0.22%
Drought	\$0.00bn	0.00%
Earthquake	\$0.00bn	0.00%
Freeze	\$0.00bn	0.00%
Heatwave	\$0.00bn	0.00%
Tsunami	\$0.00bn	0.00%
Volcano	\$0.00bn	0.00%
Wind storm	\$0.00bn	0.00%

Lloyd's City Risk Index 2015-2025

Analysing the economic exposure from 18 threats over ten years from 2015

Understand the risks: www.lloyds.com

Insight

Rio de Janeiro's potential financial losses are weighted towards Manmade shock, which accounts for \$14.86bn (61.10%) of GDP@Risk - in part because it has material exposure to only four Natural threats. Market crash, Oil price shock and Cyber attack alone represent more than half of its total potential losses.

One of Rio de Janeiro's major Natural threats is Flood, and the city is vulnerable to periodic heavy rains and mudslides, the impacts of which are exacerbated in densely populated favelas that consist of poorly constructed buildings. Fatalities are not uncommon.

Brazil is South America's largest oil and gas producer and the tenth largest producer in the world, with the largest oil discoveries in recent years. It is also the second largest producer of ethanol biofuels globally, and more than 70% of its electricity in 2013 came from hydroelectric power.

Yet some 12.74% of its GDP@Risk comes from Oil price shock. More than 90% of Brazil's reserves are in deep offshore fields that are difficult to access.

The combination of high population density and fast-developing infrastructure, meanwhile, leaves Rio with significant exposure to the Emerging threats of Human pandemic and Cyber attack (ranked 16th globally). Almost 40% of its GDP@Risk arises from Emerging risks.

Sources:

<http://www.eia.gov/countries/country-data.cfm?fips=br>

<http://www.bmfbovespa.com.br/indices/ResumoCarteiraTeorica.aspx?Indice=Ibovespa&idioma=en-us>

http://www.academia.edu/6991618/Flash_flood_control_works_around_Maracan%C3%A3_Stadium_district_in_Rio_de_Janeiro