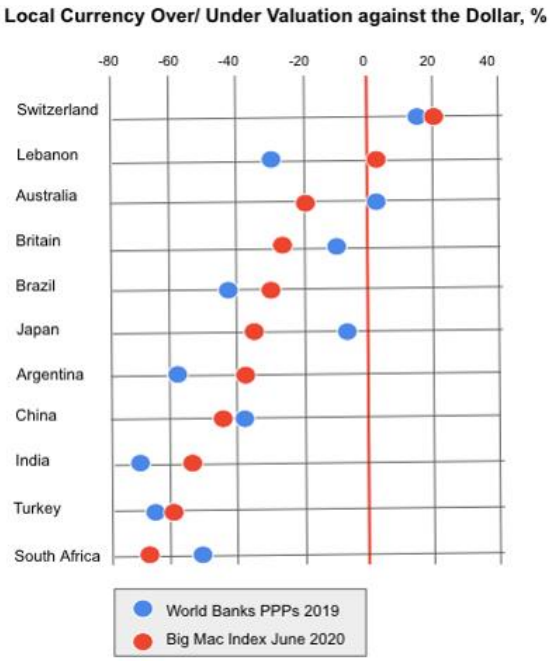

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Prisma Index:
Geomarketing
applied to Retail

Index numbers are one of the main statistical tools used in economics. Its value measures the change of a variable or group of variables over time. It is commonly utilized to measure trends such as: market prices, cost of living, industrial production, among others.

An example of an index known by many is the *Big Mac Index*, created by the British magazine *The Economist* in 1986. Its main purpose is to measure disparity in the purchasing power of consumers in different countries based on the price of a "standard" worldwide product like the Big Mac.

In the study, the price of the *Big Mac* replaces the basket traditionally used by economists to measure the variations of consumer prices in diverse locations.

Also, the "Big Mac index" enables us to estimate how expensive (overvalued) or cheap (undervalued) a country's currency is compared to the American US Dollar. The theoretical principle is that the *Big Mac* serves as an approximation to a country's exchange rate, due the fact that the elaboration and commercialization process is homogeneous in all the countries where it is sold and will allow is to visualize whether the price is "aligned" or "misaligned".



At Prisma, we created our own Index to analyze how prices and consumption levels of specific products vary through different states of the United States.

Our *Data Science* team, lead by Micaela M. Kulesz, *carried out the following actions:*

- The United States was selected to perform the price analysis of a representative basket.
- Target was the department store chain chosen to carry out the study.
- 13 products from the basket were picked. The products were: Eggs, Milk, coca cola, Ground Coffee, Oil, Rice, Corn Flakes, Shampoo, Toothpaste, Bread, Paper Toilet, Spaghetti and Liquid Laundry.
- The collection and monitoring of prices of the selected products was carried out in the Target in all 50 US states.

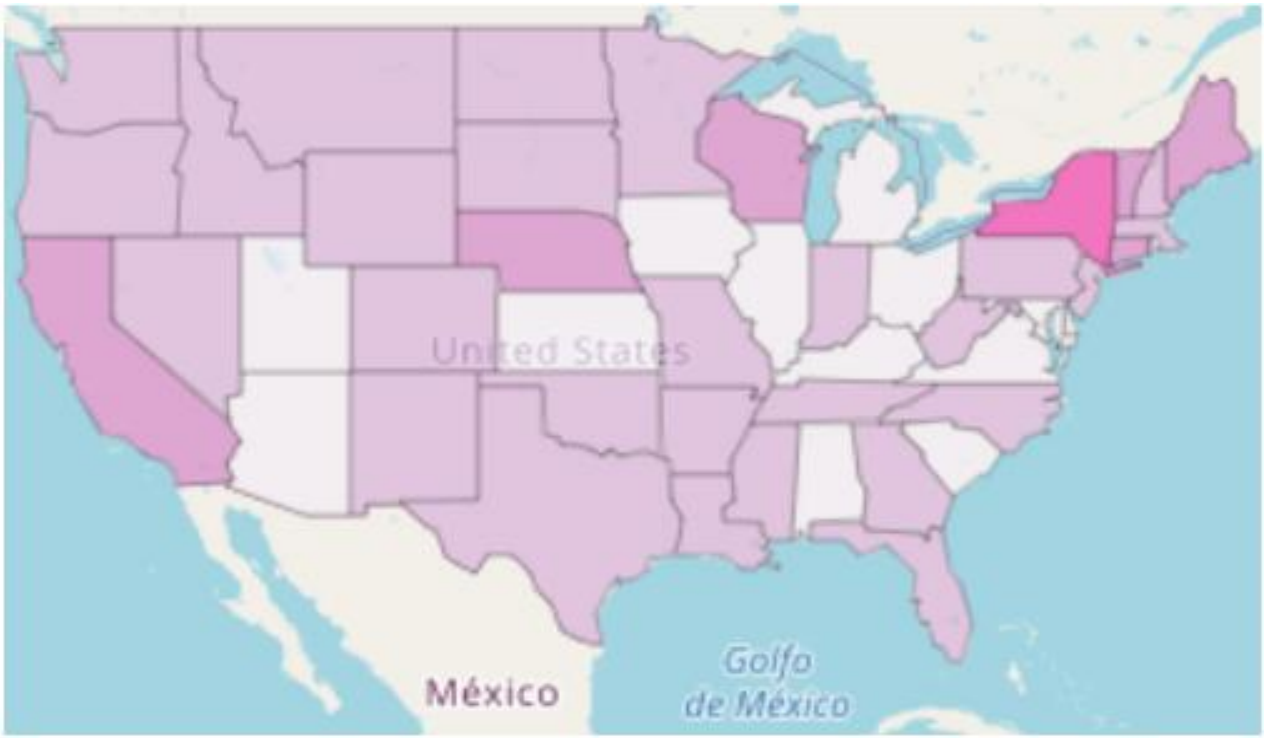
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Based on the above, a price segmentation for each state was implemented and a price index for our chosen basket was identified for each region of the country.

	State	Prisma Index
1	Alaska	$ 59,22
2	Alabama	$ 45,96
3	Arkansas	$ 49,19
4	Arizona	$ 48,03
5	California	$ 52,87
6	Colorado	$ 49,69
7	Connecticut	$ 51,70
8	Delaware	$ 47,79
9	Florida	$ 49,86
10	Georgia	$ 50,41
11	Hawaii	$ 62,39
12	Iowa	$ 47,87
13	Idaho	$ 50,29
14	Illinois	$ 48,35
15	Indiana	$ 48,43
16	Kansas	$ 46,52
17	Kentucky	$ 45,57
18	Louisiana	$ 50,34
19	Massachusetts	$ 51,17
20	Maryland	$ 47,14
21	Maine	$ 51,51
22	Michigan	$ 46,10
23	Minnesota	$ 48,71
24	Missouri	$ 49,28
25	Mississippi	$ 49,87

	State	Prisma Index
26	Montana	$ 49,92
27	North Carolina	$ 48,65
28	North Dakota	$ 48,95
29	Nebraska	$ 51,30
30	New Hampshire	$ 49,53
31	New Jersey	$ 51,63
32	New Mexico	$ 48,82
33	Nevada	$ 50,13
34	New York	$ 54,17
35	Ohio	$ 47,14
36	Oklahoma	$ 50,45
38	Oregon	$ 49,35
39	Pennsylvania	$ 50,86
40	Rhode Island	$ 50,32
41	South Carolina	$ 47,27
42	South Dakota	$ 49,75
43	Tennessee	$ 50,11
44	Texas	$ 50,12
45	Utah	$ 47,88
46	Virginia	$ 47,84
47	Vermont	$ 51,45
48	Washington	$ 50,55
49	Wisconsin	$ 51,57
50	West Virginia	$ 48,94
51	Wyoming	$ 50,21

When analysing the results, it can be concluded that state taxes and geographic distances (and their direct correlation with transportation costs); affects the price of the basket.



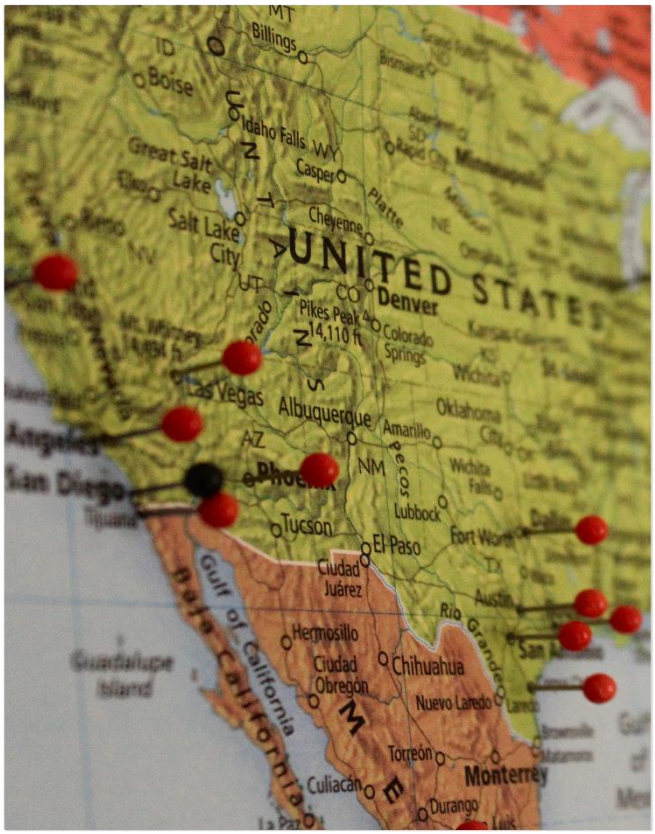
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Nevertheless, it should be noted that the values from both Alaska and Hawaii are considered “natural outliers”. The average basket of the rest of the states ranges between USD 46.00 and USD 54.00.

The Prisma Index, allows businesses to identify the return of Retail within a specific geography, and a more efficient outreach to consumers in the right place and at the right time.

Likewise, it allows you to analyze a business by locating customers, points of sale, competition on a digital map through custom symbols and colors.

Through technical and analytical domain knowledge capabilities, Prisma can design optimal retail baskets and indexes, collect data from internal and external sources and carry out information mapping to extract valuable insights to facilitate decision making applied to a specific geography..



Prisma is a SaaS platform that provides retailers with a proven process to optimize prices, promotions, inventory, assortment and space planning within the same platform. By combining business rules with sophisticated machine learning algorithms, Prisma generates suggestions that help retailers make better decisions and increase profitability.

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