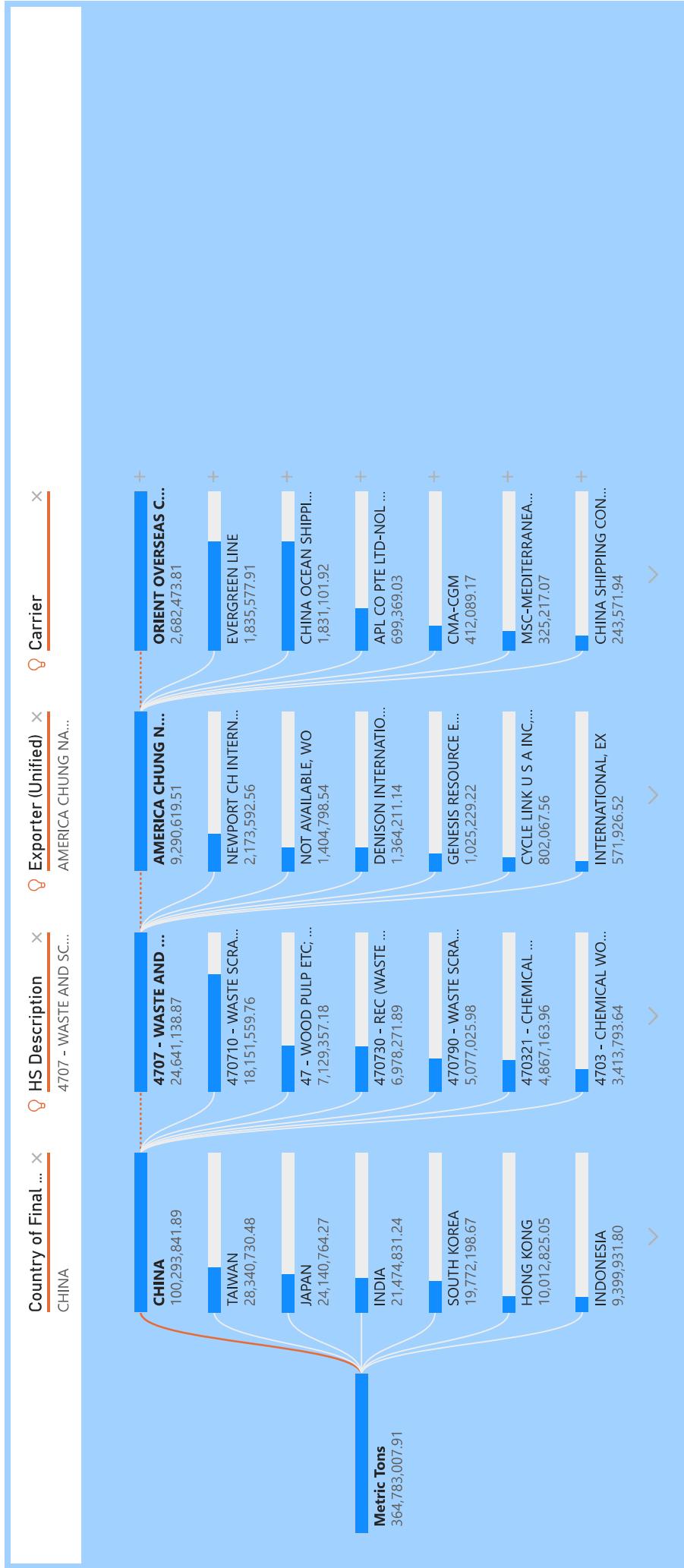
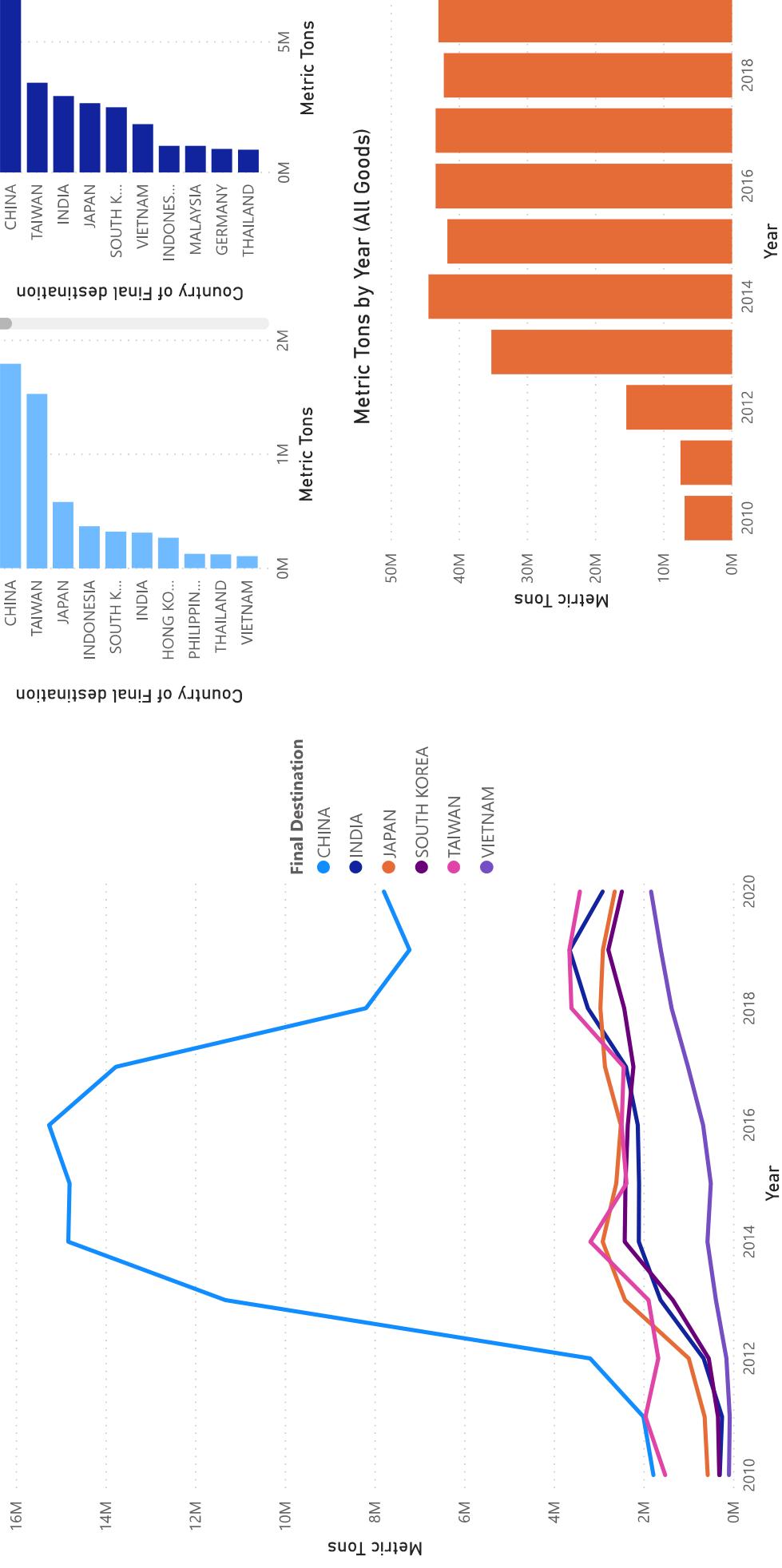


This is a decision tree to look at the factor levels that account for the largest amount of exported volume, measured in metric tonnage, over the entire time period. The diagram is revealing that some factor levels need to be merged into one homogeneous level. Attributes that require cleaning are HS Description and US Port. We may want to create an HS dictionary table at the two-digit level, merging all subcategories into the new category. All classes that begin with 47 are paper, wood, and cellulose waste and can be considered together. By merging these categories, we can better assess HS descriptions by limiting the quantity to 100, instead of the thousands that exist in the original dataset. The U.S. Port cleaning will require some cleaning, but requires institutional knowledge. For example, New York/Newark and Newark, NJ are the same port and should be made into one categorical value.

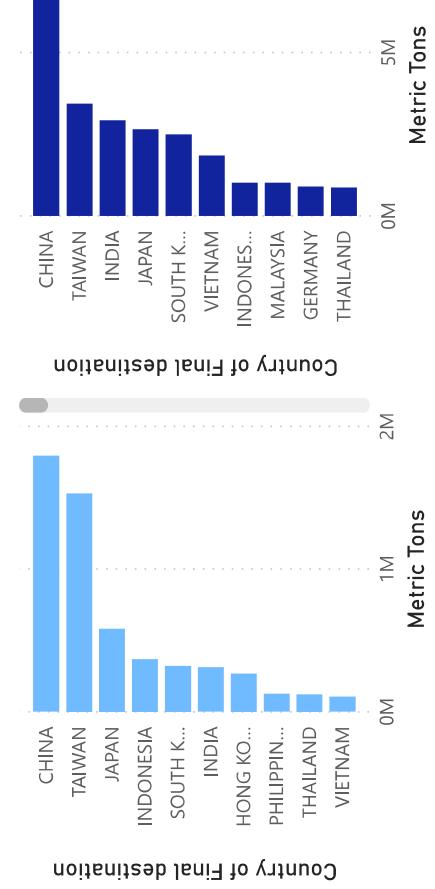


Overall exports to China crash after 2016, but modest gains from multiple other countries help compensate for these losses to the Chinese market.

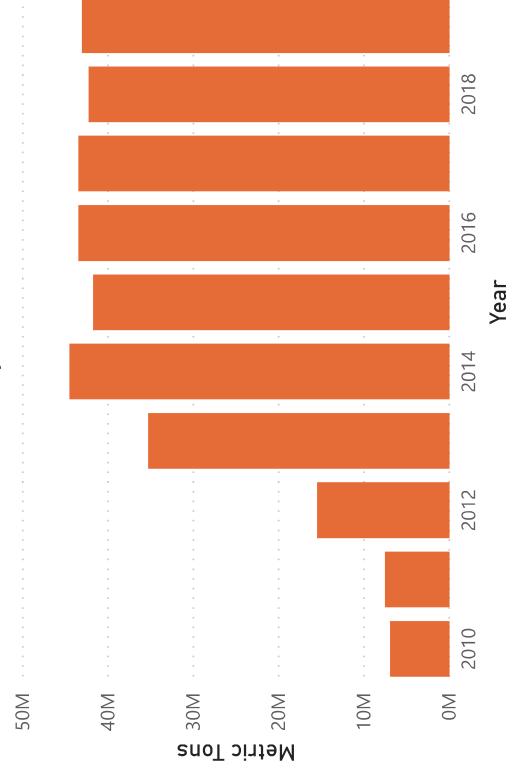
Metric Tons by Year and Final Destination



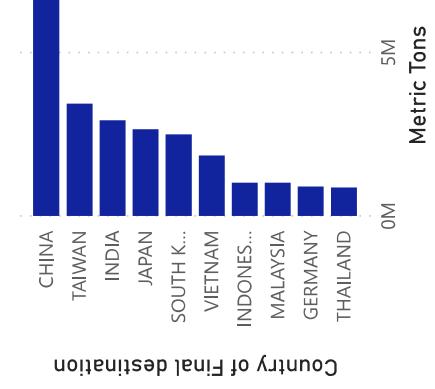
Metric Tons by Country of Final Destination [2010]



Metric Tons by Year (All Goods)

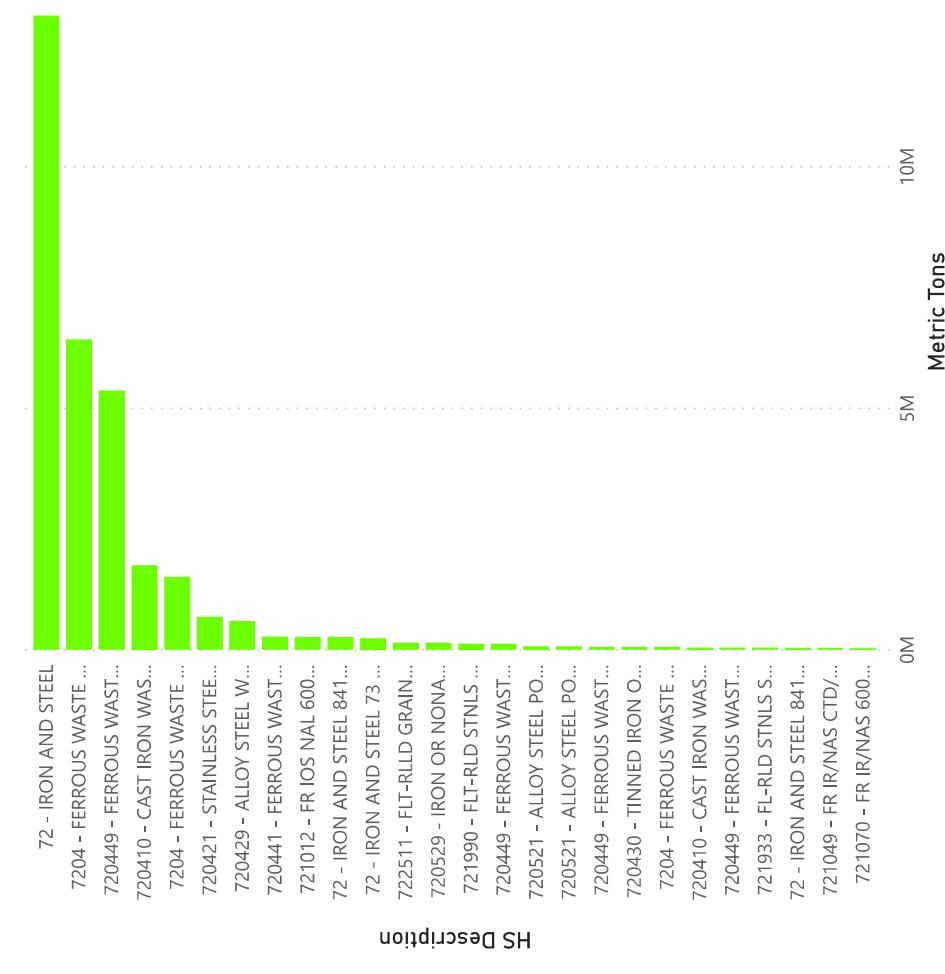


Metric Tons by Country of Final Destination [2020]

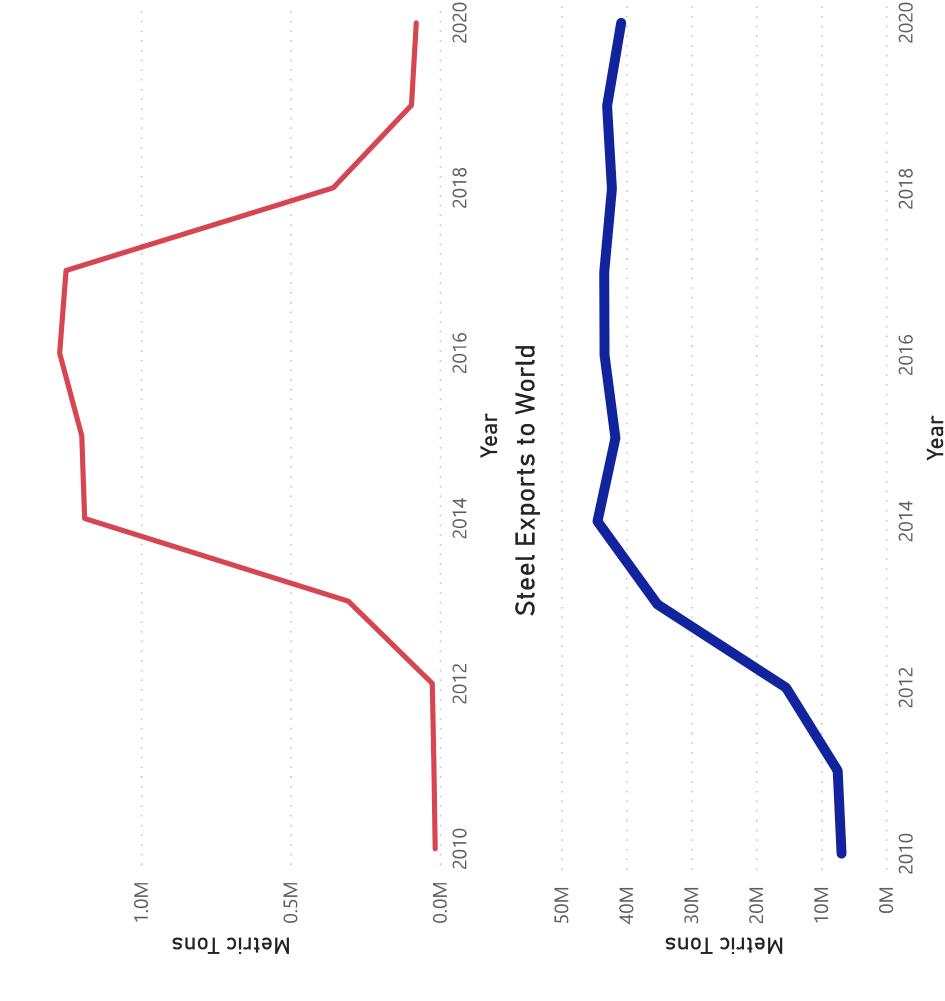


Although China dramatically decreased its U.S. steel imports by 2019, gradual increases by many other countries helped stabilize overall annual export volumes. The data below is filtered for exports with HS codes beginning with 72, the family HS code for iron and steel.

Metric Tons by HS Description



Steel Exports to China



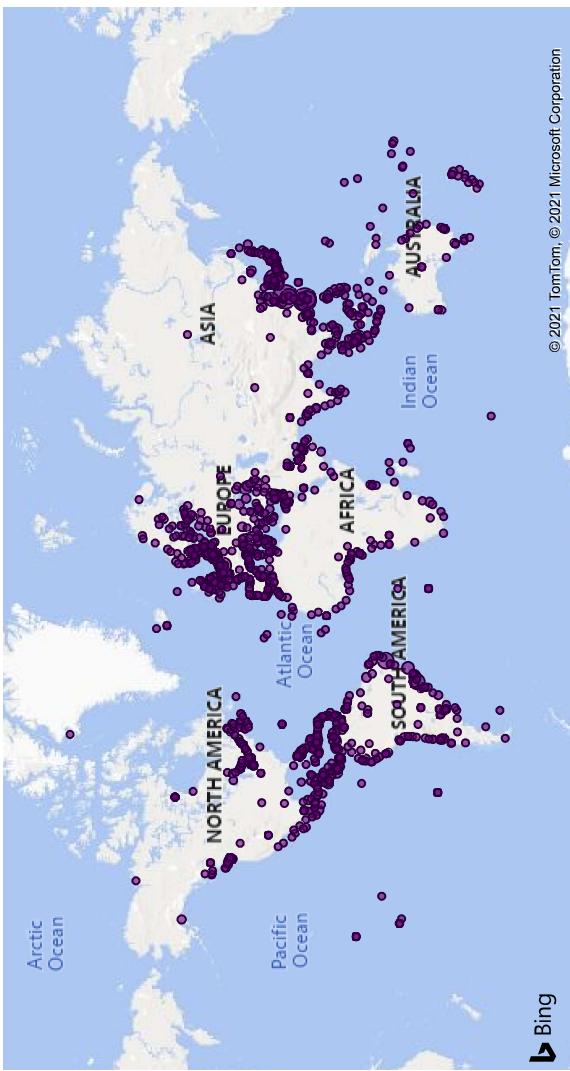
Steel Exports to World



There are over 30,000 distinct HS codes for imports. We could benefit by consolidating these into 100 HS Codes.
 The U.S. imported from 228 countries, including U.S. petroleum offshore platforms, during the 11 years.

HS Description	Teus	Country of Origin	Metric Tons
940360 - WOODEN FURNITURE NESOI	3,053,030.96	CHINA	219,773,524.62
950300 - TRICYCLE SCOOTR PEDAL CAR & SIM WHEELED TYS; ETC	2,879,786.96	BRAZIL	133,594,349.40
940161 - SEATS WITH WOODEN FRAMES UPHOLSTERED NESOI	2,639,909.51	SOUTH KOREA	85,091,080.60
9401 - SEATS (EXCEPT BARBER DENTAL ETC) AND PARTS 9403 - FURNITURE NESOI AND PARTS THEREOF	2,594,899.71	JAPAN	75,835,484.23
401110 - NEW PNEUMATIC TIRES OF RUBBER FOR MOTOR CARS	2,445,063.69	GERMANY	47,364,049.88
9401 - SEATS (EXCEPT BARBER DENTAL ETC) AND PARTS	2,407,993.80	VIETNAM	37,393,777.57
8708 - PARTS & ACCESS FOR MOTOR VEHICLES (HEAD 8701-8705)	2,360,606.23	GUATEMALA	34,274,029.45
0803 - BANANAS INCLUDING PLANTAINS FRESH OR DRIED	1,888,140.27	TAIWAN	33,369,341.59
9403 - FURNITURE NESOI AND PARTS THEREOF	1,871,254.79	MEXICO	33,057,275.30
4011 - NEW PNEUMATIC TIRES OF RUBBER	1,652,169.42	THAILAND	31,352,358.72
870899 - PARTS AND ACCESSORIES FOR MOTOR VEHICLES NESOI	1,541,842.45	ITALY	30,895,171.58
940320 - METAL FURNITURE NESOI	1,367,439.85	RUSSIA	29,238,282.07
080390 - BANANAS FRESH OR DRIED OTHER THAN PLANTAINS	1,340,028.67	INDIA	28,727,256.21
940350 - WOODEN BEDROOM FURNITURE EXCEPT SEATS	1,320,113.36	TURKEY	28,059,901.15
94 - FURNITURE; BEDDING ETC; LAMPS NESOI ETC; PREFAB BD	1,199,858.82	CANADA	26,220,637.77
220300 - BEER MADE FROM MALT	1,094,227.68	COSTA RICA	25,719,582.86
080300 - BANANAS AND PLANTAINS FRESH OR DRIED	970,969.88	INDONESIA	25,310,668.14
940490 - ART OF BEDDING EX MATTRSS ETC INC QUILTS CUSHIONS	938,888.66	NETHERLANDS	20,814,223.40
220421 - WINE FR GRAPE NESOI & GR MUST W ALC NOV 2 LITERS	890,702.02	MALAYSIA	19,485,522.71
9405 - LAMPS & LIGHTING FITTINGS & PARTS ETC NESOI	754,268.24	SWITZERLAND	19,346,792.29
950510 - ART F CHRISTMAS FESTIVITIES AND PTS & ACCESSORIES	737,657.47	UNITED KINGDOM	17,330,210.06
940179 - SEATS WITH METAL FRAMES NOT UPHOLSTERED NESOI	715,217.65	AUSTRALIA	17,305,475.39
9404 - MATTRESS SUPPORTS; ARTICLES OF BEDDING ETC.	669,340.23	CHILE	17,145,682.97
9506 - ARTLS & EQUIP F GENRL PHYSCL EXERC ETC; POOLS; PTS	642,924.93	FRANCE	16,556,763.11
2204 - WINE OF FRESH GRAPES; GRAPE MUST NESOI	620,273.57	UKRAINE	16,448,553.80
732690 - ARTICLES OF IRON OR STEEL NESOI	607,928.96	BELGIUM	15,254,145.67
870829 - PTS & ACCESS OF BODIES OF MOTOR VEHICLES NESOI	600,035.09	SPAIN	15,085,638.57
950601 - ARTC /EQUILIB E GENL DHLCS EVERC GVMN ETC NESOI DTS	5,821,106.20	ECUADOR	12,021,186.60
Total	95,350,790.50		1,341,352,767.87

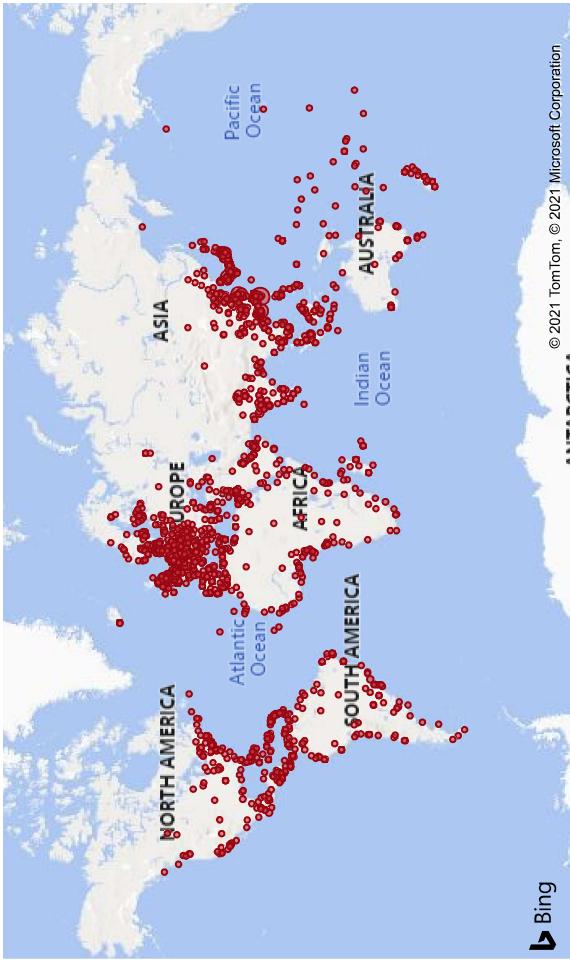
Foreign Ports sending goods to U.S. (MTONS)



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Bing

Foreign Ports receiving U.S. goods (MTONS)



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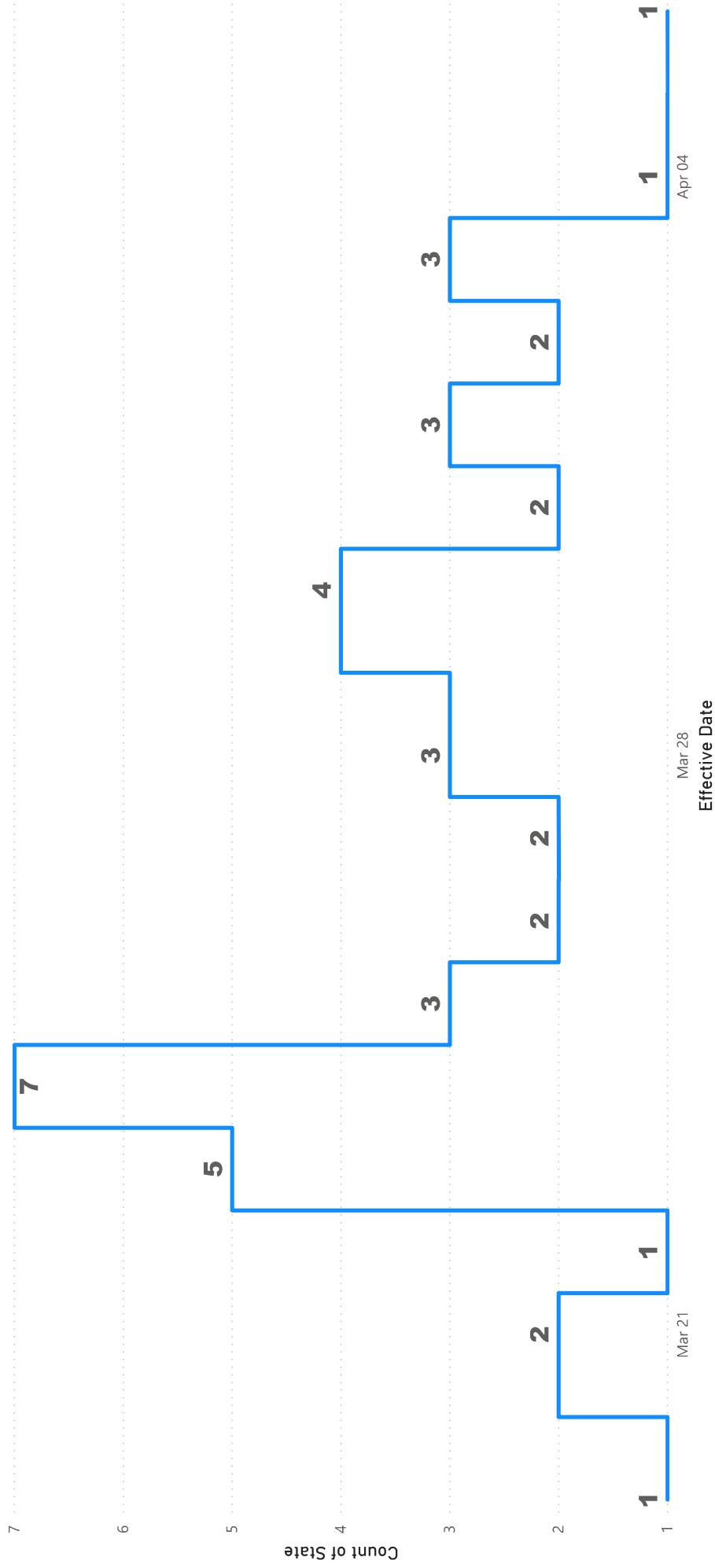
Bing

There are hundreds of carriers that sent goods to the U.S., but dozens of carriers that exported U.S. goods to other countries. We should consider cleaning the carrier names into consolidated groups, ie: anything with Maersk is Maersk, anything with Safmarine is Safmarine. This may require a few rounds of cleaning.

Carrier	Metric Tons
ZIM INTEGRATED SHIPPING SERVICES LTD	7,039,673.57
YANG MING MARINE TRANSPORT CORP	13,933,655.80
WAN HAI LINES LTD	229,896.43
WALLEMUS WILHELMSEN LOGISTICS AMERICAS LLC	3,751,876.83
UNITED ARAB SHIPPING CO SAG	4,018,699.38
SOUTHERN CHOICE MOVING SERVICE LLC	0.00
SM LINE CORPORATION	660,386.42
SEAFREIGHT LINE LTD	123,935.70
SEABOARD MARINE LTD	1,156,994.44
SAFMARINE CONTAINER LINES (HEREINAFTER SAFMARINE)	1,764,034.74
SAFMARINE CONTAINER LINES	83,173.54
R7 CARRIER	6,708.20
Total	364,783,007.91

Nine states never had an effective date for stay at home orders, and are excluded in this line graph.

Effective Date of Quarantine for U.S. States

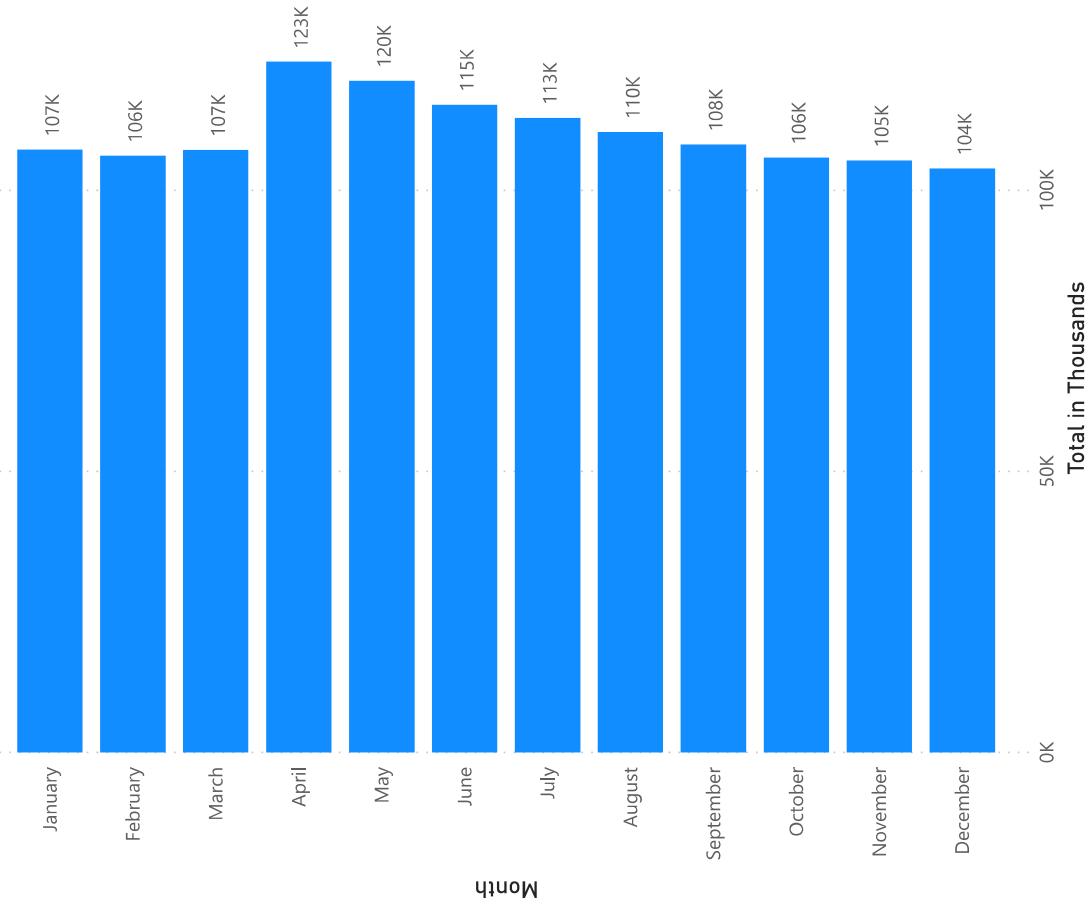


Average tariff rates are aggregating across all 23 classes for each country, per year.

Does the FTA status of any country change during the time period?

Are unemployment numbers really this constant over time?

Total in Thousands by Month



Average_Tariff by Country

