

This analysis uses nationally collected landings data for the for thePacifregion, downloaded from the NOAA FOSS site <https://foss.nmfs.noaa.gov/apexfoss/f?p=215:200:.....>.

```
## [[1]]
## [1] "When back calculated, Q_{i,t} did not equal V_{i,t}/PI_{i,t}"
##
## [[2]]
## [1] "When back calculated, Q_{i,t} did not equal V_{i,t}/PI_{i,t}"
##
## [[3]]
## [1] "When back calculated, Q_{i,t} did not equal V_{i,t}/PI_{i,t}"
##
## [[4]]
## [1] "When back calculated, Q_t did not equal V_t/PI_t"
##
## [[5]]
## [1] "When back calculated, ln(Q_t/Q_{t-1}) = did not equal sum( ( frac{R_{i, t} - R_{i, t-1}}{2}) *
##
## [[6]]
## [1] "Out of 93 columns, 12 of species V columns are completely empty, 8 of species Q columns are comp
```

Species in Each category by Common Name

```
## $Shellfish
## [1] "MOLLUSKS **" "ABALONES **" "ABALONE, RED "
## [6] "ABALONE, GREEN " "ABALONE, WHITE " "LIMPETS **"
## [11] "MUSSEL, BLUE " "MUSSEL, CALIFORNIA " "SCALLOPS **"
## [16] "OYSTER, EUROPEAN FLAT " "MUSSELS, FW **" "COCKLE, NUTTALL "
## [21] "CLAM, CALIFORNIA JACKKNIFE " "CLAM, VARIABLE COQUINA " "CLAM, MANILA "
## [26] "CLAM, SOFTSHELL " "PANOPEA GENEROSA " "CLAM, PACIFIC GEODUCK "
## [31] "OCTOPUS **" "CRUSTACEANS **" "SHRIMP, BRINE "
## [36] "SHRIMP, PENAEID **" "SHRIMP, PACIFIC ROCK " "SHRIMP, OCEAN "
## [41] "CRAYFISHES, FRESHWATER **" "LOBSTER, CALIFORNIA SPINY " "SHRIMP, GHOST **"
## [46] "CRAB, SPIDER **" "CRAB, SNOW/TANNER **" "CRAB, SOUTHERN TANNER "
## [51] "CRAB, RED PA " "ECHINODERM **" "STARS, OTHER SEA **"
## [56] "OYSTER, OLYMPIA "
##
## $Finfish
## [1] "LAMPREY, SEA " "HAGFISH FAMILY **" "SHARKS, UNCLASSIFIED"
## [5] "SHARKS, THRESHER **" "SHARK, THRESHER " "SHARK, BIGEYE T"
## [9] "SHARK, BROWN CAT " "SHARK, BLUE " "SHARK, LEOPARD "
## [13] "SHARK, DOGFISH **" "SHARK, SPINY DOGFISH " "SHARK, PACIFIC "
## [17] "SKATES **" "SKATE, BIG " "SKATE, CALIFORNIA"
## [21] "SKATE, ROUGHTAIL " "RATFISH SPOTTED " "STURGEONS **"
## [25] "STURGEON, WHITE " "EELS **" "EEL, MORAYS **"
## [29] "SHAD, AMERICAN " "SARDINE, PACIFIC " "HERRING, ROUND "
## [33] "SALMON, PACIFIC **" "SALMON, PINK " "SALMON, CHUM "
## [37] "SALMON, SOCKEYE " "SALMON, CHINOOK " "TROUT, RAINBOW "
## [41] "SMELT, EULACHON " "SMELT, WHITEBAIT " "ARGENTINES **"
## [45] "CARP, COMMON " "SQUAWFISHES **" "SACRAMENTO BLACK"
## [49] "SUCKERS **" "CATFISHES-BULLHEADS, UNCLASSIFIED **" "CATFISHES-BULLHEADS"
## [53] "TOMCOD, PACIFIC " "HAKE, PACIFIC (WHITING) " "CUSK-EELS **"
## [57] "PACIFIC GRENADIER " "GIANT GRENADIER " "FLYINGFISHES **"
## [61] "SILVERSIDES **" "OPAH " "SCORPIONFISHES "
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## [65] "ROUGHEYE ROCKFISH " "ROCKFISH, PACIFIC OCEAN PERCH " "ROCKFISH, BROWN
## [69] "ROCKFISH, REDBANDED " "ROCKFISH, SILVERGRAY " "ROCKFISH, COPPE
## [73] "ROCKFISH, SPLITNOSE " "ROCKFISH, GREENSTRIPED " "ROCKFISH, WIDOW
## [77] "ROCKFISH, CHILIPEPPER " "ROCKFISH, SHORTBELLY " "ROCKFISH, BLACK
## [81] "ROCKFISH, VERMILION " "ROCKFISH, BLUE " "ROCKFISH, CHINA
## [85] "ROCKFISH, CANARY " "ROCKFISH, REDSTRIPE " "ROCKFISH, YELLOW
## [89] "ROCKFISH, YELLOWEYE " "ROCKFISH, STRIPETAILED " "ROCKFISH, SHARP
## [93] "ROCKFISH, GREENSPOTTED " "ROCKFISH, STARRY " "ROCKFISH, PINK
## [97] "ROCKFISH, SQUARESPOT " "ROCKFISH, COWCOD " "ROCKFISH, SPECK
## [101] "ROCKFISH, GRASS " "ROCKFISH, FLAG " "ROCKFISH, BANK
## [105] "ROCKFISH, TREEFISH " "ROCKFISH, HONEYCOMB " "ROCKFISH, GOPHE
## [109] "ROCKFISH, PINKROSE " "ROCKFISH, GREENBLOTCHED " "ROCKFISH, BLACK
## [113] "THORNYHEAD, LONGSPINE " "GREENLINGS **" "GREENLING, KELP
## [117] "SABLEFISH " "SCULPINS **" "GROUPERS **"
## [121] "SPOTTED CABRILLA " "SAND PERCH " "ROCK BASSES, PAC
## [125] "WHITEFISH, OCEAN " "JACK MACKEREL " "YELLOWTAIL JACK
## [129] "DOLPHIN GENUS **" "GRUNTS **" "CROAKER, PACIFIC
## [133] "BASS, WHITE SEA " "OPALEYE " "HALFMOON "
## [137] "BLACKSMITH " "MULLETS **" "MULLET, STRIPED
## [141] "BARRACUDA, PACIFIC " "SHEEPHEAD, CALIFORNIA " "WOLF-EEL "
## [145] "AMERICAN SAND LANCE " "MUDSUCKER, LONGJAW " "TUNA, SKIPJACK
## [149] "BONITO, PACIFIC " "MACKEREL (SCOMBER) **" "MACKEREL, CHUB
## [153] "TUNA, ALBACORE " "TUNA, BLUEFIN PACIFIC " "TUNA, YELLOWFIN
## [157] "MACKEREL, SPANISH " "PACIFIC SIERRA " "WAHOO "
## [161] "POMPANNO, PACIFIC " "FLATFISH **" "FLOUNDER, PACIFIC
## [165] "HALIBUT, CALIFORNIA " "SOLE, FANTAIL " "FLOUNDERS, RIGHT
## [169] "SOLE, PETRALE " "SOLE, SLENDER " "SOLE, FLATHEAD
## [173] "FLOUNDER, STARRY " "SOLE, YELLOWFIN " "SOLE, BUTTER "
## [177] "SOLE, C-O " "SOLE, CURLFIN " "TURBOT, HORNYHEAD
## [181] "HALIBUT, PACIFIC " "TURBOT, DIAMOND " "SOLE, REX "
## [185] "SOLE, ROCK " "LEATHERJACKETS **" "HERRING, PACIFIC
## [189] "SKATE, BLACK " "CABEZON "
##
## $Other
## [1] "WITHHELD FOR CONFIDENTIALITY " "SEAWEEDES, OTHER **" "SEAWEED, KELP **"
## [5] "LAMPREY, PACIFIC " "SHARK, SOUPFIN " "FINFISH **"
## [9] "ANCHOVIES, OTHER **" "POLLOCK, WALLEYE " "ROCKFISH, CALICO "
## [13] "TUNA, SKIPJACK " "MARLIN, STRIPED " "ROCK SOLE "
## [17] "ENGLISH SOLE " "REX SOLE " "FROGS **"
## [21] "ALLIGATOR, AMERICAN " "FLOUNDER, ARROWTOOTH " "SOLE, DEEPSEA "

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Where are there negative values?

X	Tsn	Year	State	AFS.Name	Pounds	Dollars	Collection	Confidentiality	category.tax
51314	165647	2014	New Jersey	MUMMICHOG	-321	-4494	Commercial	Public	Actinopteryg
72470	168791	2014	Connecticut	DOLPHINFISH	-1	-2	Commercial	Public	Actinopteryg

Where are there negative values?

X	Tsn	Year	State	AFS.Name	Pounds	Dollars	Collection	Confidentiality
429	11272	2017	Rhode Island	SEAWEED, KELP **	-1	7390	Commercial	Public
6543	79916	2015	New York	MUSSEL, SLIPPERSHELL	-1	NA	Commercial	Public
8386	81495	2010	Maryland	CLAM, QUAHOG **	-29	1506	Commercial	Public

X	Tsn	Year	State	AFS.Name	Pounds	Dollars	Collection	Confidentiality
25465	160502	2009	Virginia	SHARK, BONNETHEAD	-5	1011	Commercial	Public
28827	161030	2007	New Jersey	FINFISH **	-8	NA	Commercial	Public
51314	165647	2014	New Jersey	MUMMICHOG	-321	-4494	Commercial	Public
72470	168791	2014	Connecticut	DOLPHINFISH	-1	-2	Commercial	Public
92811	172412	2014	Connecticut	MACKEREL, CHUB	-1	NA	Commercial	Public
111150	551570	2017	Connecticut	SHRIMP, BROWN	-1	229	Commercial	Public