

Homework 4 - Submission 1

ECON 470

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Homework 4

[Link to Github](#)

```
/var/folders/7k/7hqtt0l56y3dqfql4pb9y3jr0000gn/T/ipykernel_61706/4199759841.py:9: DtypeWarning
```

Columns (68,98,99,100,101,102,103,104,105,106) have mixed types. Specify dtype option on import

Original dataset shape: (350892, 108)

Data types:

```
contractid      object
planid          float64
org_type        object
plan_type       object
partd          object
snp            object
eghp           object
org_name        object
org_marketing_name object
plan_name       object
dtype: object
```

Sample data for key columns:

	contractid	planid	plan_type	snp	partd
0	H0084	1.0	Local PP0	No	Yes
1	H0084	1.0	Local PP0	No	Yes
2	H0084	1.0	Local PP0	No	Yes
3	H0084	1.0	Local PP0	No	Yes
4	H0084	1.0	Local PP0	No	Yes

Unique values in key columns:

plan_type unique values:

plan_type	
PFFS	102157
HMO/HMOPOS	94602
Local PPO	69182
Regional PPO	50587
1876 Cost	29102
National PACE	2946
Medicare-Medicaid Plan HMO/HMOPOS	1283
MSA	847
ESRD I	111
PSO (State License)	39

Name: count, dtype: int64

snp unique values:

snp	
No	350892

Name: count, dtype: int64

partd unique values:

partd	
Yes	257551
No	93341

Name: count, dtype: int64

Filtering steps:

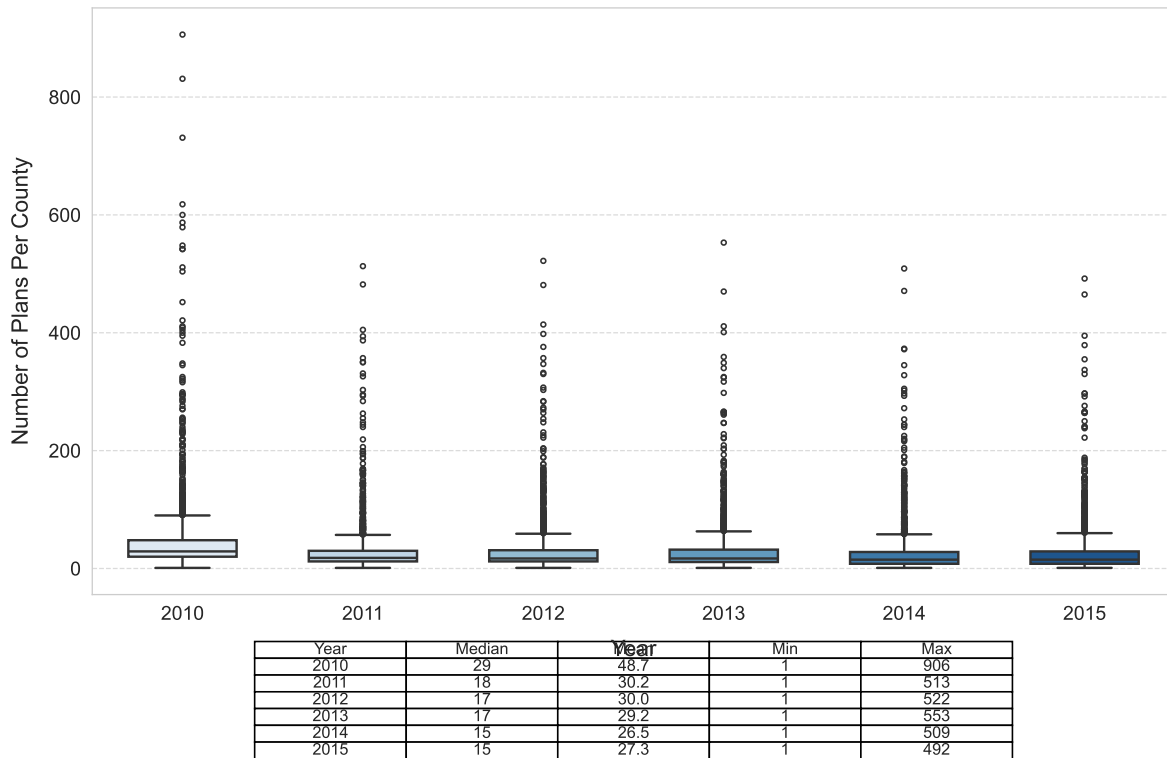
Column 'snp' present: True
Column 'planid' present: True
Column 'plan_type' present: True
Column 'partd' present: True
Filtered SNPs (string): 0 rows removed
Filtered 800-series plans (numeric): 0 rows removed
Filtered prescription drug only plans: 0 rows removed

Final filtered dataset shape: (350892, 108)

/var/folders/7k/7hqtt0l56y3dqfql4pb9y3jr0000gn/T/ipykernel_61706/4199759841.py:97: FutureWarning

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.14.0. Assign

Distribution of Medicare Advantage Plans by County (2010-2015)



Yearly statistics of plan counts per county:

	year	mean	median	min	max
0	2010	48.655961	29.0	1	906
1	2011	30.208972	18.0	1	513
2	2012	29.957354	17.0	1	522
3	2013	29.211623	17.0	1	553
4	2014	26.509131	15.0	1	509
5	2015	27.282862	15.0	1	492

Percentage of counties with fewer than 5 plans by year:

year	percentage
2010	0.544366
2011	1.805252

```
2012    2.788409
2013    2.796053
2014    8.909795
2015    8.541320
dtype: float64
```

Percentage of counties with more than 15 plans by year:

```
year
2010    86.663038
2011    59.190372
2012    55.658830
2013    53.563596
2014    48.090758
2015    49.306711
dtype: float64
```

/var/folders/7k/7hqtt0l56y3dqfql4pb9y3jr0000gn/T/ipykernel_61706/4199759841.py:176: DtypeWarning

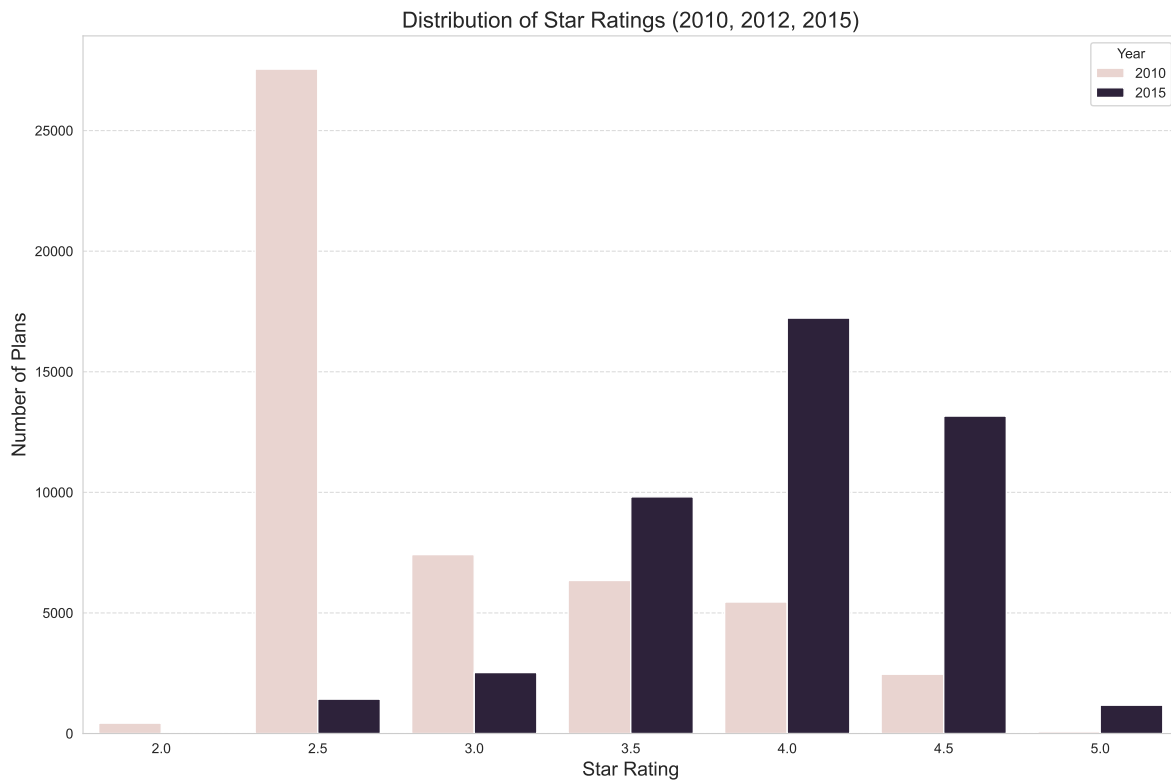
Columns (68,98,99,100,101,102,103,104,105,106) have mixed types. Specify dtype option on import

Star Rating Distribution for 2010:

2.0 stars: 431.0 plans (0.9%)
 2.5 stars: 27549.0 plans (55.4%)
 3.0 stars: 7419.0 plans (14.9%)
 3.5 stars: 6347.0 plans (12.8%)
 4.0 stars: 5453.0 plans (11.0%)
 4.5 stars: 2459.0 plans (4.9%)
 5.0 stars: 75.0 plans (0.2%)

Star Rating Distribution for 2015:

2.5 stars: 1426.0 plans (3.1%)
 3.0 stars: 2528.0 plans (5.6%)
 3.5 stars: 9813.0 plans (21.6%)
 4.0 stars: 17225.0 plans (38.0%)
 4.5 stars: 13163.0 plans (29.0%)
 5.0 stars: 1175.0 plans (2.6%)

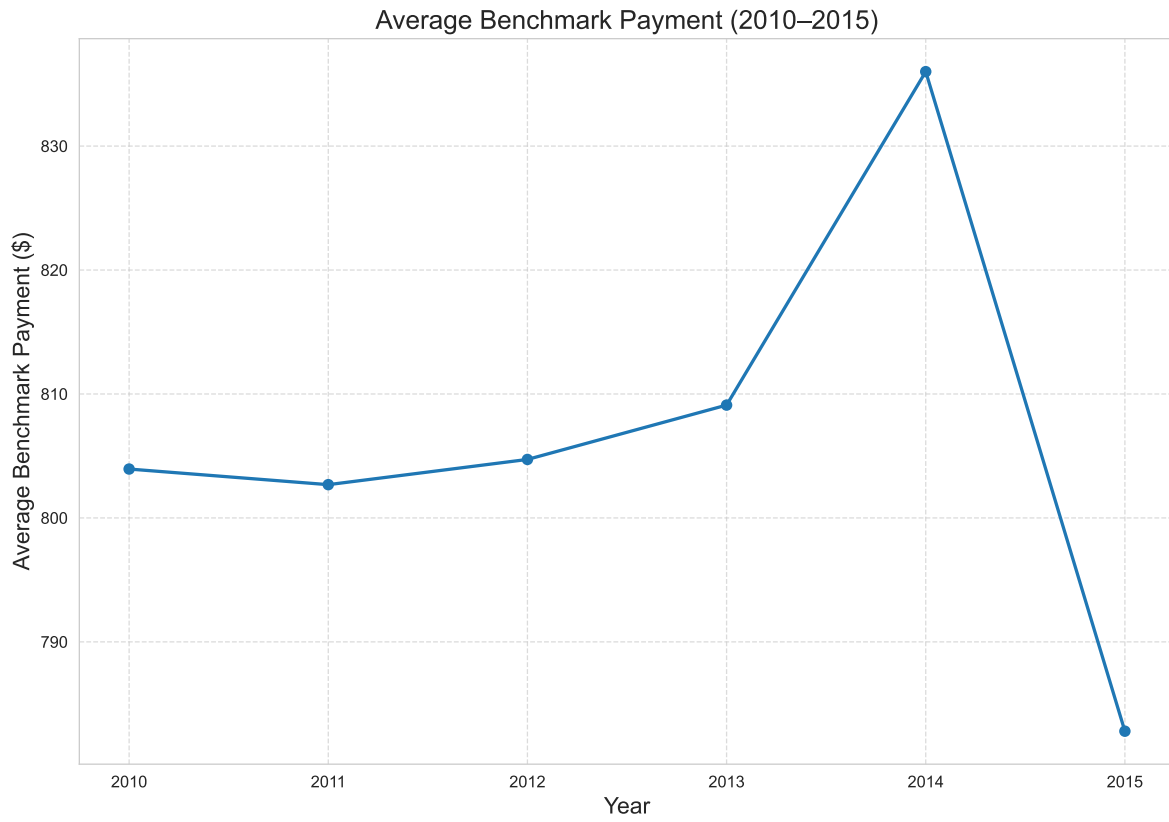


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Data not showing up for 2014 for some reason.

Average Benchmark Payment by Year (including missing):

year	ma_rate
2010	\$803.94
2011	\$802.68
2012	\$804.72
2013	\$809.10
2014	\$836.01
2015	\$782.79



Change from 2010 to 2015: \$-21.15 (-2.6%)

Medicare Advantage Share by Year:

2010.0: 1.19%
2011.0: 1.47%
2012.0: 1.62%
2013.0: 1.66%
2014.0: 1.80%
2015.0: 1.88%

MA share change from 2010 to 2015: 0.70%

Correlation between MA share and benchmark payment: 0.04 (p-value: 0.9368)

