DATA ANALYSIS REPORT

Data Inspection

. inspect cshr

cshr: Number of Observations

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Total Integers Nonintegers

| Negative - - -

| Zero - - -

| Positive - - -

| ----------- ----------- -----------

| Total - - -

| Missing 229,371

+---------------------- -----------

. -9.0e+307 229,371

(0 unique value)

.

Shareholders Data

. codebook cshr

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cshr (unlabeled)

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type: string (str10)

unique values: 25,332 missing "": 0/229,371

examples: "0.702"

"11"

"4.417"

"NA"

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Shareholders for CSHO

. codebook csho

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csho (unlabeled)

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type: string (str9)

unique values: 60,267 missing "": 0/229,371

examples: "11.009"

"2.438"

"3.963"

"53.571"

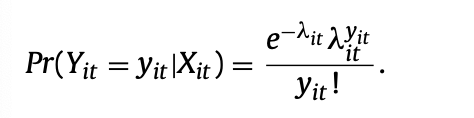
.

DATASET VARIABLES OF INTEREST

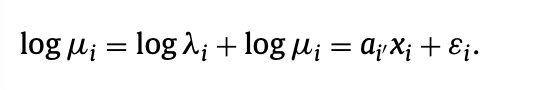
1. **Date Date**
2. **cusip:** ID\_CUSIP
3. **Acctstd:** accounting Standard
4. **acqniintc:** Net Interest Income Contribution
5. **che:** Cash Equivalents
6. **bcltbl:** Benefits and Claims - Total (Business Line)
7. **bcnlr:** Benefits Ceded - Nonlife
8. **ci:** Comprehensive Income – Total
9. **dcvsr:** Debt - Senior Convertible
10. **dd1:** Long-Term Debt Due in One Year
11. **do:** Disc Operations
12. **dt:** Debt tax
13. **ea:** Earnings
14. **emp:** Estimated Market Price
15. **mrc3:** Rental Commitments - Minimum – 3rd Year
16. **mrc4:** Rental Commitments - Minimum – 4th Year
17. **pncwia:** Core Pension w/o Interest Adjustment After-tax
18. **pncwid:** Core Pension w/o Interest Adjustment Diluted EPS Effect
19. **pncwieps:** Core Pension w/o Interest Adjustment Basic EPS Effect
20. **prstkc:** Purchase of Common and Preferred Stock
21. **pvpl:** Provision - Pension Liabilities
22. **re:** Retained Earnings
23. **ulcm:** Current Liabilities – Miscellaneous
24. **upmpfs:** Premium on Preferred Stock\*
25. **uxinst:** Interest On Short-Term Debt – Utility
26. **wda:** Writedowns After-tax
27. **City:**
28. **county**
29. **dlrsn:** Research Co Reason for Deletion
30. **fax:**
31. **Phone:**
32. **State**
33. **financialyear:**
34. **l3\_numpatents:**
35. **l3\_ncites**

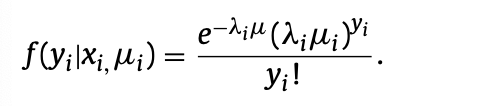
DATA MODELLING

Poisson Model



Negative Binomial Model





. cii means 100 229371, poisson

-- Poisson Exact --

Variable | Exposure Mean Std. Err. [95% Conf. Interval]

-------------+---------------------------------------------------------------

| 100 2293.71 4.789269 2284.333 2303.116

. summarize cshr csho acqcshi cshtr\_c l3\_numpatents financialyear naics fyrc adjex\_f auop

Variable | Obs Mean Std. Dev. Min Max

-------------+---------------------------------------------------------

cshr | 0

csho | 0

acqcshi | 0

cshtr\_c | 0

l3\_numpate~s | 229,371 6.749192 65.2302 0 4422

-------------+---------------------------------------------------------

financialy~r | 229,371 1988.142 11.80331 1950 2005

naics | 208,831 395700.9 173488 21 999990

fyrc | 229,371 9.818076 3.421918 1 12

adjex\_f | 0

auop | 171,896 1.57593 1.146448 0 5

CHARACTERISTICS OF INNOVATION ACTIVITIES OF FIRMS BY INDUSTRY

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Characteristics of Innovation activities of firms by industry | | | | | |
| Industries | Mean | Median | Lowest | Highest | Sum (sum/total) |
| Textile |  |  |  |  |  |
| Automotive |  |  |  |  |  |
| Chemical |  |  |  |  |  |
| Electronics |  |  |  |  |  |
| Mechanics |  |  |  |  |  |
| … |  |  |  |  |  |

DESCRIPTIVE STATISTICS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Descriptive statistics | | | | | |
| Variables | Unit | Mean | Std. Dev | Lowest | Highest |
| Patent | Number |  |  |  |  |
| Asset | Log |  |  |  |  |
| ROA | Number of years |  |  |  |  |
| Sales growth | Percent |  |  |  |  |
| Leverage | Percent |  |  |  |  |
| R&D intensity | Percent |  |  |  |  |
| Business groups | Dummy |  |  |  |  |
| Insider ownership | Percent |  |  |  |  |

CORRELATION STATISTICS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Correlation statistics | | | | | |
| Variables |  |  |  |  |  |
| Patent |  |  |  |  |  |
| Asset |  |  |  |  |  |
| ROA |  |  |  |  |  |
| Sales growth |  |  |  |  |  |
| Leverage |  |  |  |  |  |
| R&D intensity |  |  |  |  |  |
| Business groups |  |  |  |  |  |
| Insider ownership |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Negative binomial analysis | | | | | |
| Explanatory Variables | Hypotheses |  |  |  |  |
| Insider Ownership | H1 |  |  |  |  |
|  |  |  |  |  |  |
| Control variables |  |  |  |  |  |
| Asset |  |  |  |  |  |
| ROA |  |  |  |  |  |
| Sales growth |  |  |  |  |  |
| Leverage |  |  |  |  |  |
| R&D intensity |  |  |  |  |  |
| Business groups |  |  |  |  |  |
| … |  |  |  |  |  |

Negative binomial analysis

1. Whether is more easy way to do this, or to replace Poisson Distribution (such as Pearson/OLS as backup plan)

The OLS model is more easy to implement than the Poisson Distribution

1. For testing two, could I just use regression of insider ownership and firm size

No .There are a lot of variable is place and choosing two variables would be like working in a blind environment that is shut from other influence factors.

1. Concerning industries? Automobile/Pharmaceutical/Communication…

Automobile Industries and Pharmaceutical Companies withstand the test of time