Chicago Traffic Citations

Eva Bogdewic, ejb4nd
Corey Runkel, cnr3cg
Tim Kim, tsk8va

The Ticket Trap

Where Chicago Issues Parking Tickets and Who Pays For Them

by David Eads and Melissa Sanchez

Last updated: July 31, 2019 (Version 1.01)

This interactive database contains more than 54 million parking, standing and vehicle compliance tickets issued since 1996, obtained by ProPublica Illinois in partnership with WBEZ and made public for the first time. You can search for your address and compare your ward with others, and you can see how Chicago's reliance on ticketing for revenue affects motorists across the city. About our data | Read our series on how Chicago ticket debt is burdening black and low-income communities. →

Find Your Ward

Enter an address or place name

For example: 200 North State St., 2800 S. California Ave.

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DRIVEN INTO DEBT

How Chicago Ticket Debt Sends Black Motorists Into Bankruptcy

A cash-strapped city employs punitive measures to collect from cash-strapped residents — and lawyers benefit.

by Melissa Sanchez and Sandhya Kambhampati

February 27, 2018

Motivation

“A cash-strapped city employs **punitive measures** to collect from **cash-strapped residents** — and lawyers benefit”

(Sanchez and Kambhampati)

The Question

Can we predict the **amount** that a motorist pays towards a **parking citation** based on factors such as traffic stop location and driver origin?

Response Variable

`total_payments`

paid by ticketee to the Department of Finance in 2018 US dollars, when data were collected

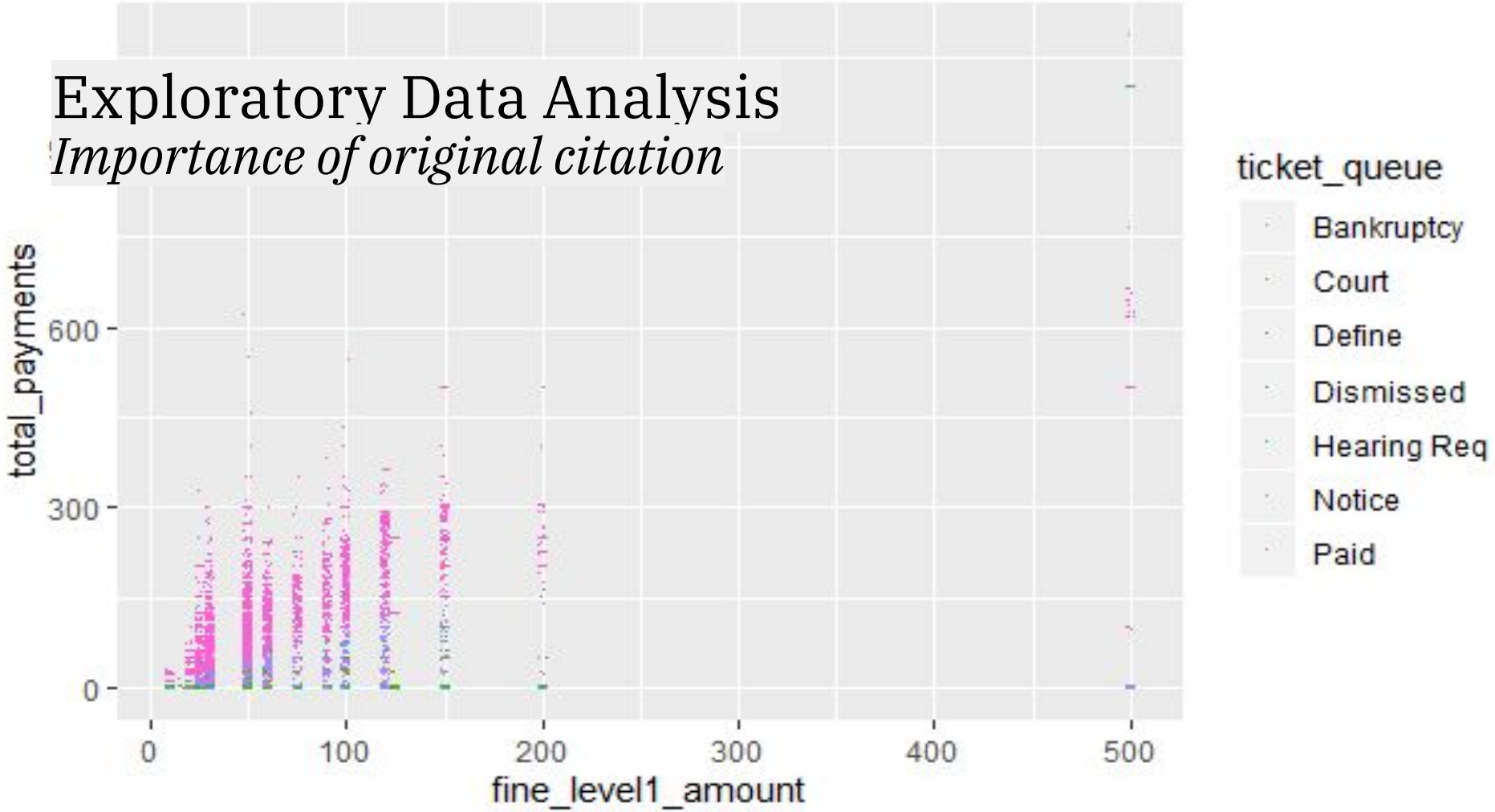
Data Processing & Cleaning

I. Computational
   A. 20.4 GB → 100 MB
   B. Removed of missing values

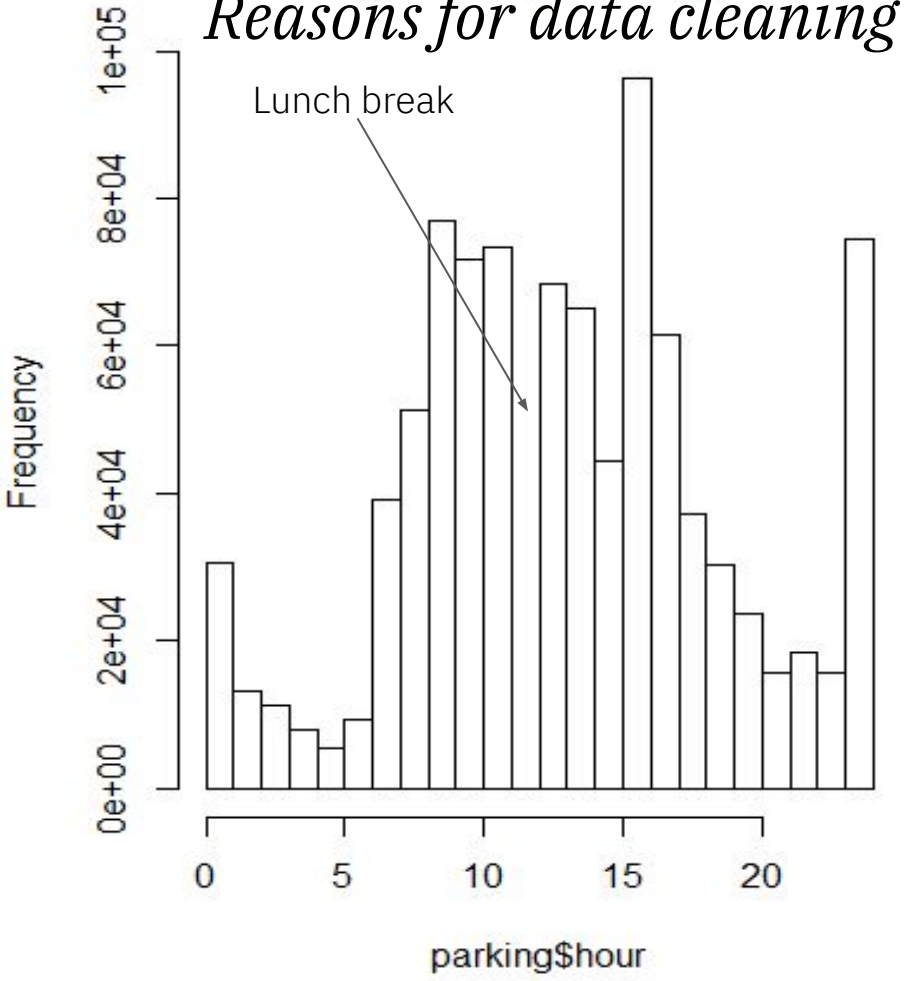
II. Analytical
   A. Transformed codes to make meaningful categories
      1. Date → seasonal factors
      2. State → probability of court contest
      3. Community_area_name → neighborhoods (eg. Southside, Northside, Central ‘side’)
      4. Car make → visibility of vehicle to ticketing authority (eg. luxury, average, non-cars)
   B. Shrunk predictor space
      1. Ticketing unit → organization within Chicago

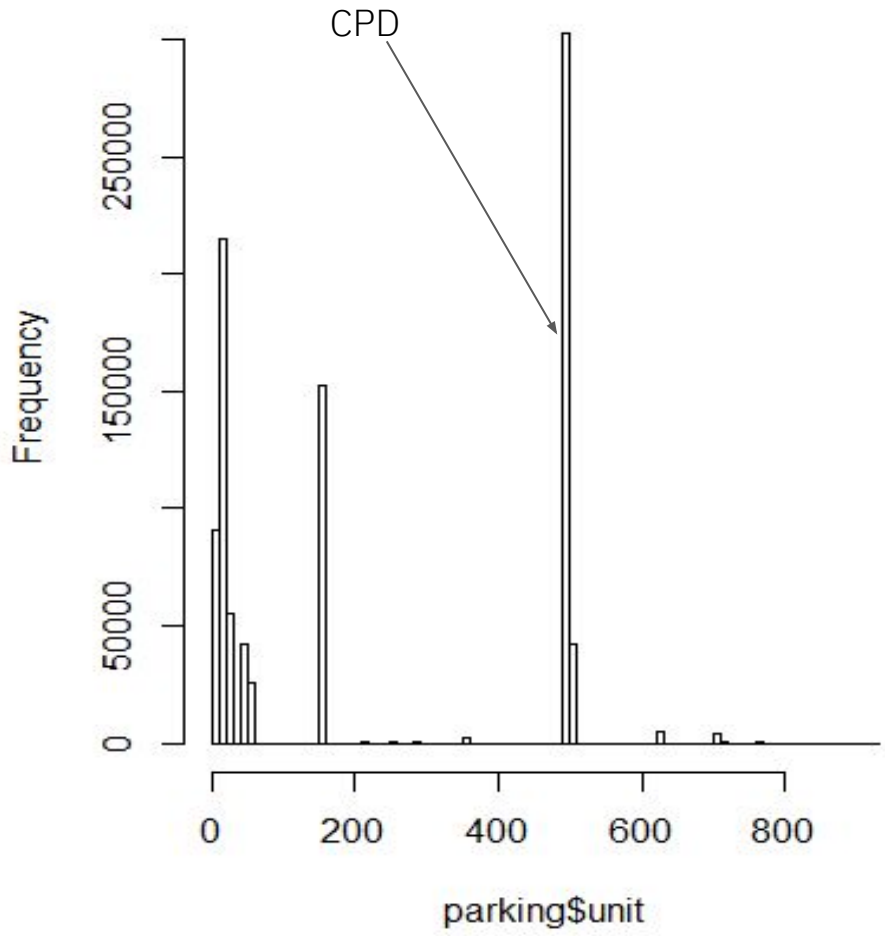
Exploratory Data Analysis

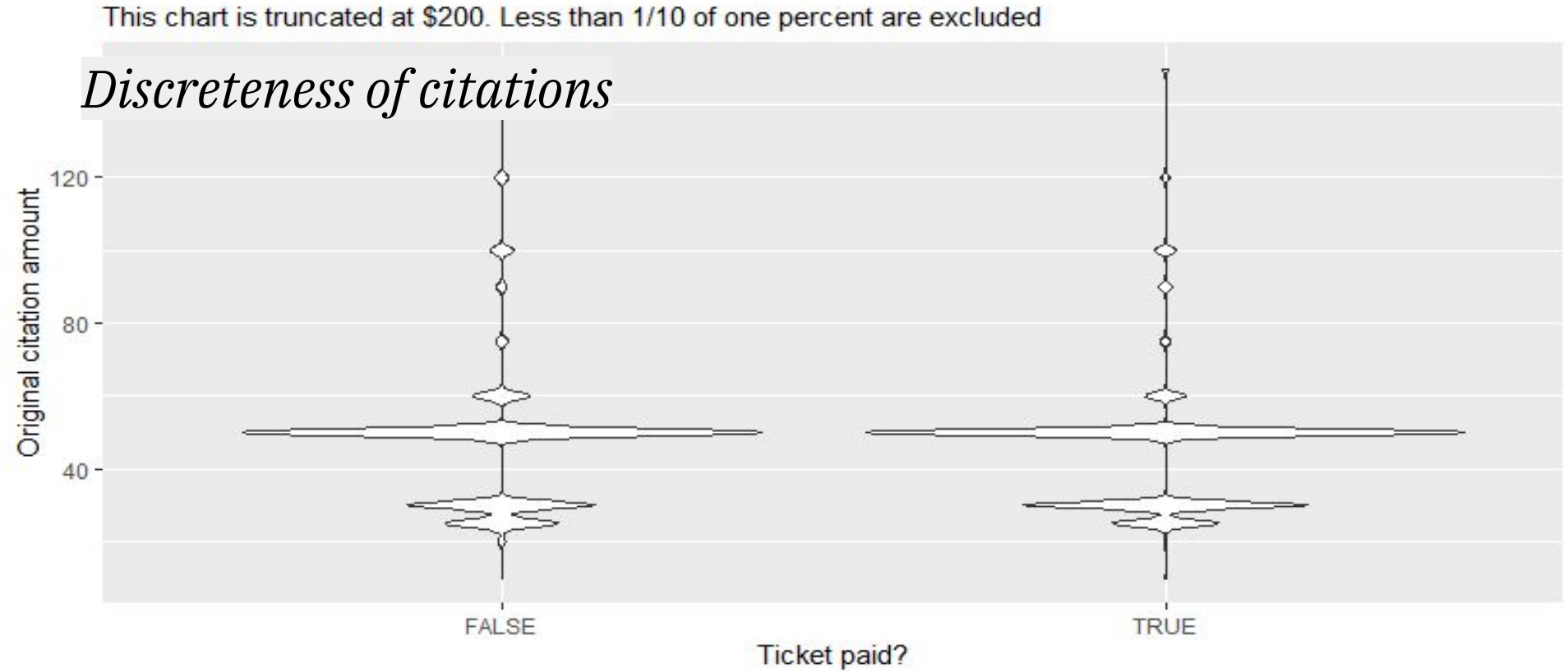
Importance of original citation



Reasons for data cleaning






This chart is truncated at $200. Less than 1/10 of one percent are excluded
Discreteness of citations
Original citation amount
120
80
40
FALSE
TRUE
Ticket paid?

Analysis from Regression: Inference
Original citation

```
total_payments ~ fine_level1_amount + ticket_queue + side + season +
season2 + unit_description

fine_level1_amount           7.492e-01  1.440e-03 520.256  < 2e-16 ***
```

Analysis from Regression: Inference

Neighborhoods

```
sidesouthwest          2.831e+00  1.781e-01  15.894  < 2e-16 ***
sidesouth              3.607e+00  1.753e-01  20.575  < 2e-16 ***
sidefarsouthwest       1.055e+01  3.831e-01  27.546  < 2e-16 ***
sidewest               4.993e+00  1.216e-01  41.061  < 2e-16 ***
sidefarsoutheast       8.703e+00  3.488e-01  24.954  < 2e-16 ***
sidenorth              4.188e-02  1.308e-01   0.320   0.7489
sidenorthwest          4.944e+00  2.614e-01  18.911  < 2e-16 ***
sidecentral            3.199e+00  1.126e-01  28.418  < 2e-16 ***
```

Reference class is `Southeast`

Analysis from Regression: Inference
Ticketing authority

```
unit_descriptionDOF             -2.655e+00  8.038e-02 -33.033  < 2e-16
unit_descriptionMiscellaneous   -4.741e-01  1.664e-01  -2.848   0.0044
unit_descriptionUnidentified    -6.243e+01  1.877e+00 -33.260  < 2e-16
```

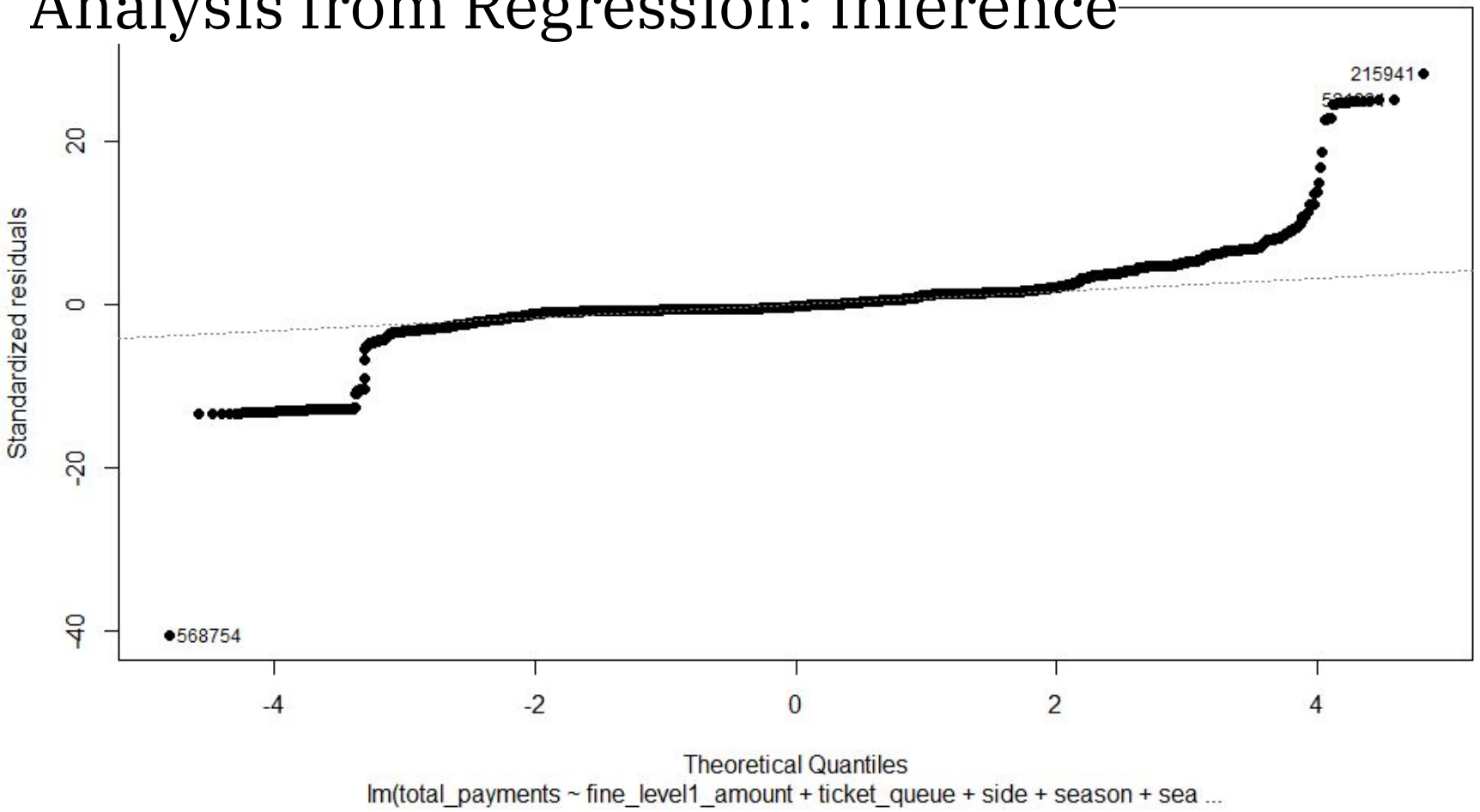
Reference class is `Chicago Police Department`

Analysis from Regression: Inference
Legal status

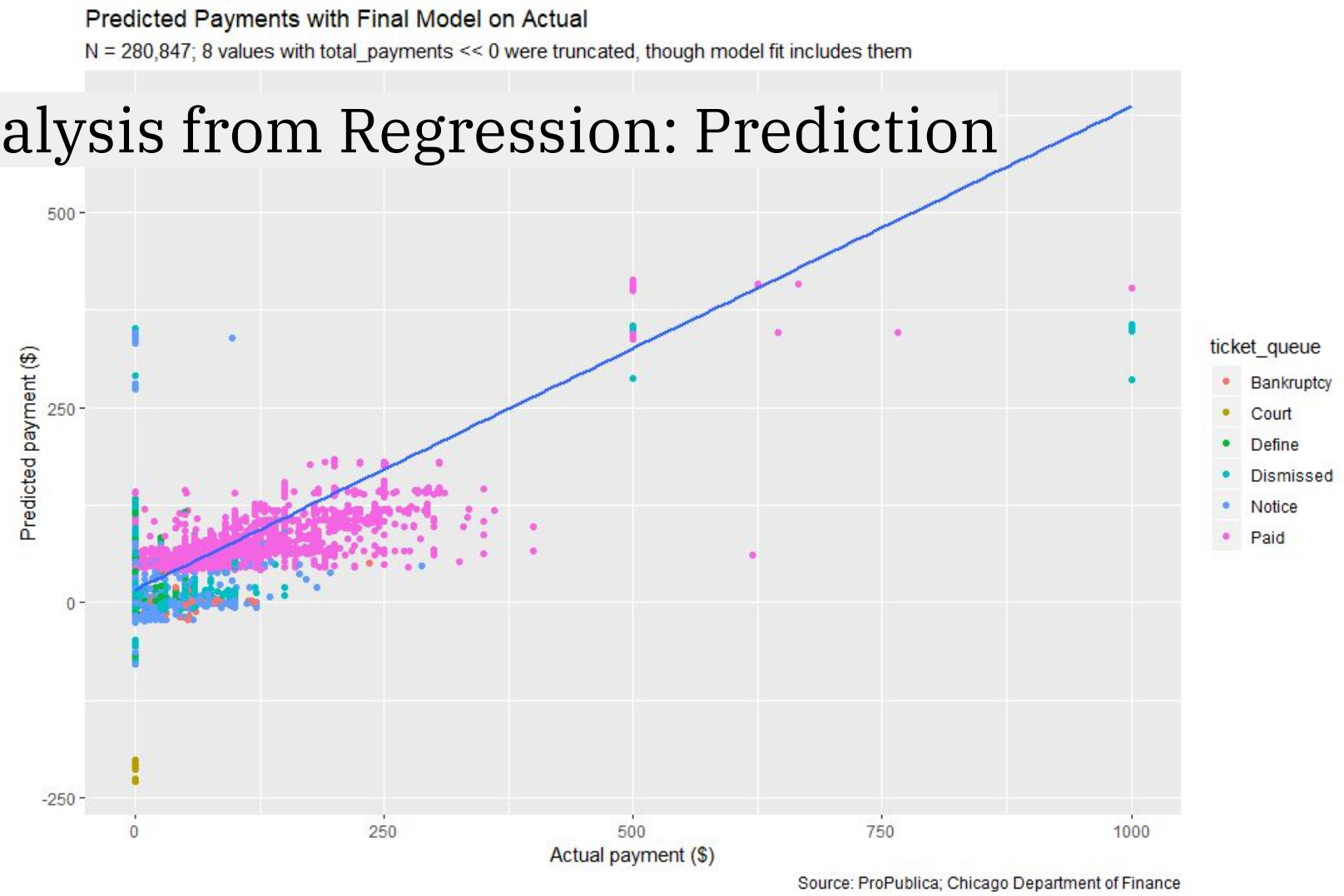
```
ticket_queueCourt          -2.060e+02  3.605e+00 -57.147  < 2e-16 ***
ticket_queueDefine          3.153e+00  5.021e-01   6.280  3.4e-10 ***
ticket_queueDismissed       1.241e+01  5.086e-01  24.400  < 2e-16 ***
ticket_queueHearing Req    -3.369e+02  2.634e+01 -12.793  < 2e-16 ***
ticket_queueNotice         -1.481e-01  5.061e-01  -0.293   0.7698
ticket_queuePaid            6.693e+01  4.972e-01 134.633  < 2e-16 ***
```

Reference class is `Bankruptcy`

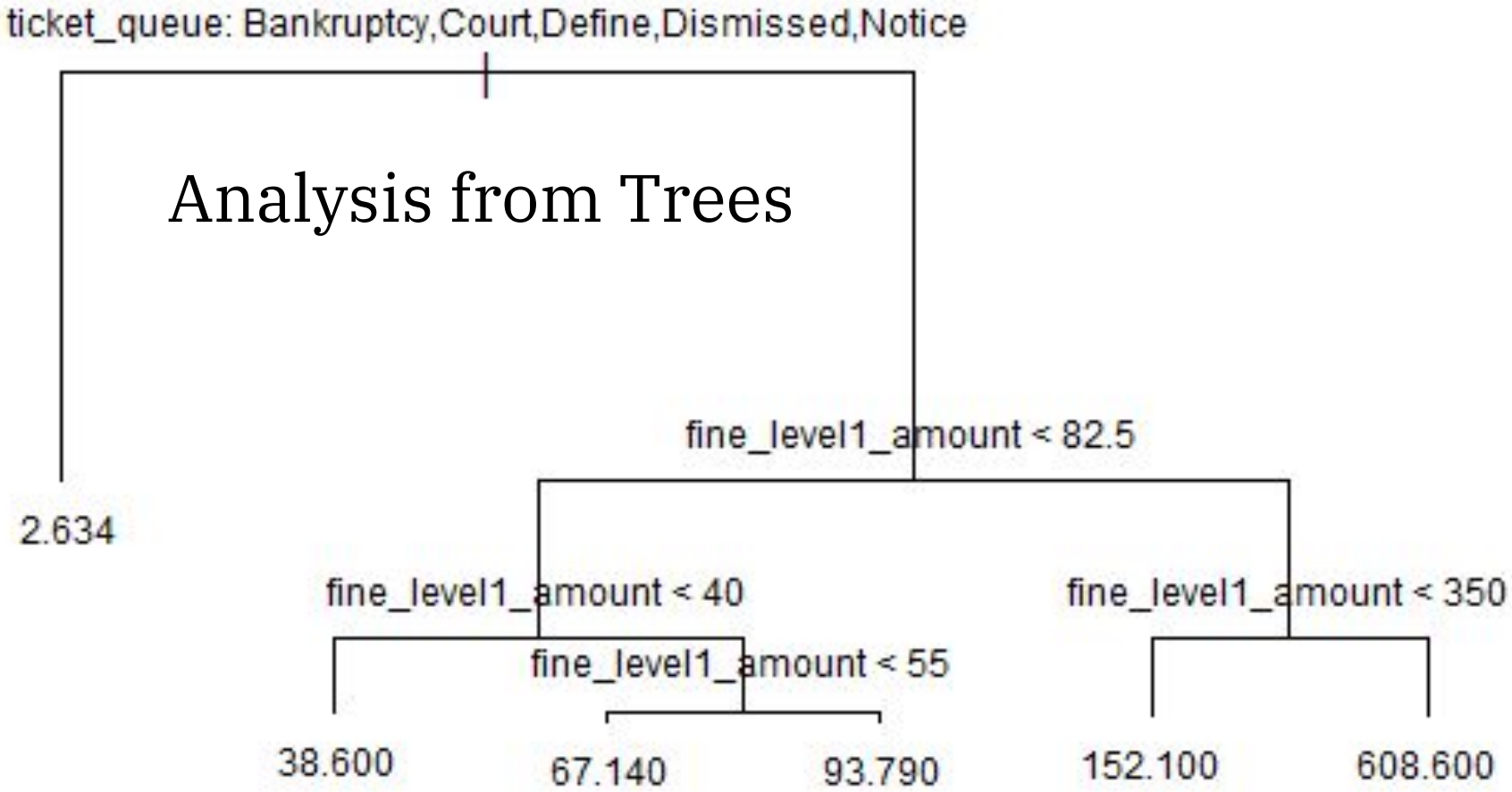
Analysis from Regression: Inference



Analysis from Regression: Prediction



Analysis from Trees



Interesting Findings

Regression analysis indicates City of Chicago cannot accurately predict whether a driver will eventually pay a parking ticket

However some variables are significant enough to still draw conclusions

- Parking tickets issued in certain geographic areas of Chicago are more likely to be paid
- Certain ticketing agencies are more effective at collecting
- Out-of-state drivers are far less likely to return to Chicago to contest citations

These all support our theory and the ProPublica article claims that the changed ticket policy more strongly impacted poorer regions of Chicago

Further Work

- Data over time
  - Compare model's power to data before and after policy implementation
- Include variables for more detailed geographic location
  - Computationally limited; too many community areas, so we had to reduce to vague areas
- Further investigation of "Bankruptcy" observations:
  - We want to know if any tickets result in severe financial strain on drivers
  - Model limited by LDA approach
- Agency-specific analysis
  - Closer look at which agencies are better or worse at ticketing

DRIVEN INTO DEBT

How People Are Using Our Chicago Parking Ticket Data in Their Research

Close to 1,300 people have downloaded data from our app, The Ticket Trap. We talked with some of them.

by Haru Coryne, Nov. 29, 4 a.m. CST

References

https://www.propublica.org/nerds/download-chicago-parking-ticket-data

https://features.propublica.org/driven-into-debt/chicago-ticket-debt-bankruptcy/

https://projects.propublica.org/chicago-tickets/