MODS203 : Data analysis in economics

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C-discount : an analysis of price dispersion of retail laptops

Cdiscount

Topic Presentation

- Why Cdiscount ?

- Choice to study laptops

Study of price dispersion

- What's price dispersion ?

- What was our goal regarding laptops on Cdiscount regarding price dispersion ?

Data Collection Strategy and Description

- Scrapping with Selenium because of JavaScript

- The problem of captchas

Data Collection Strategy and Description

- Data we managed to collect :
    - Title of the article
    - Price
    - Seller's Name
    - Page Number
    - Characteristics
    - Rating
    - State
    - Timestamp
    - Link to the page

Pre-processing of the data while scrapping

- Work on the data

    - Making prices into floats ("899€99" → 899,99)
    - Isolating the seller's name ("vendu par XXX et expédié par YYY" → "XXX")

Data analysis

1) Preparation of the Data

- Data Cleansing
- Separating items based on their brand
- Extracting data for Macs and Dell for further analysis

Data analysis   2) Scheme of price dispersion

- ## For Dells

- ## For Macs
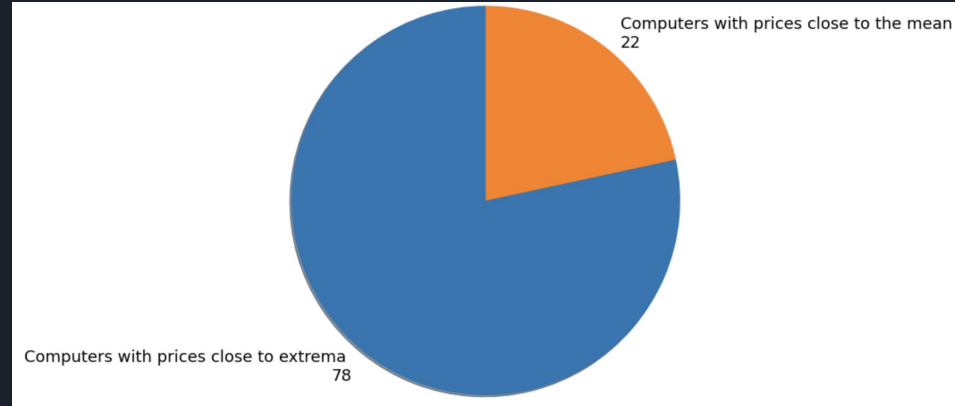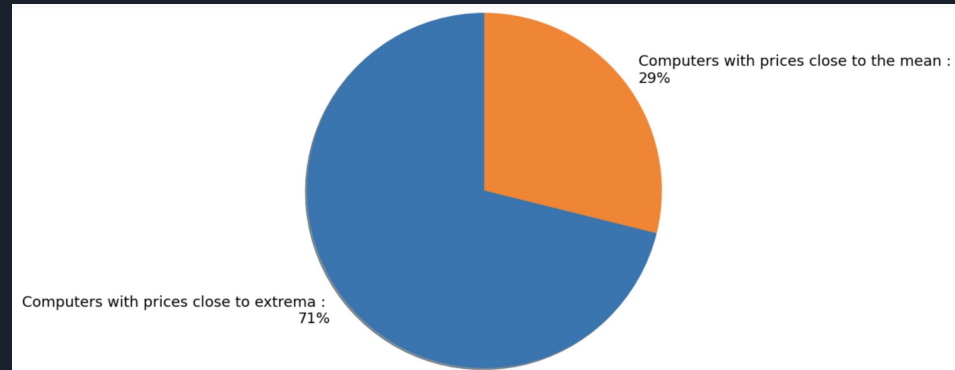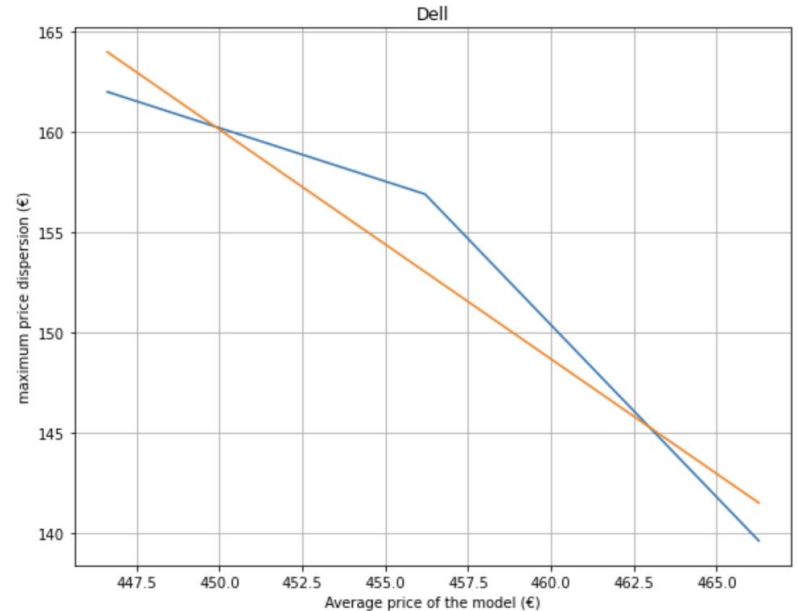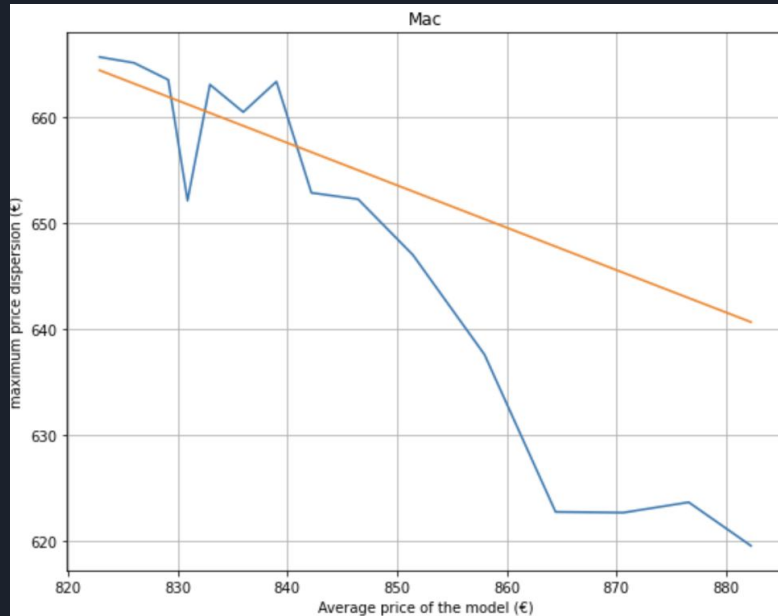
Fig 1 : Price dispersion for Dell laptops

Computers with prices close to the mean
22

Computers with prices close to extrema
78

Fig 2 : Price dispersion for Mac laptops

Computers with prices close to the mean :
29%

Computers with prices close to extrema :
71%

Data analysis

3) Correlation between price and price dispersion

Fig 3 : Correlation between price and price dispersion + model for Mac and Dell laptops
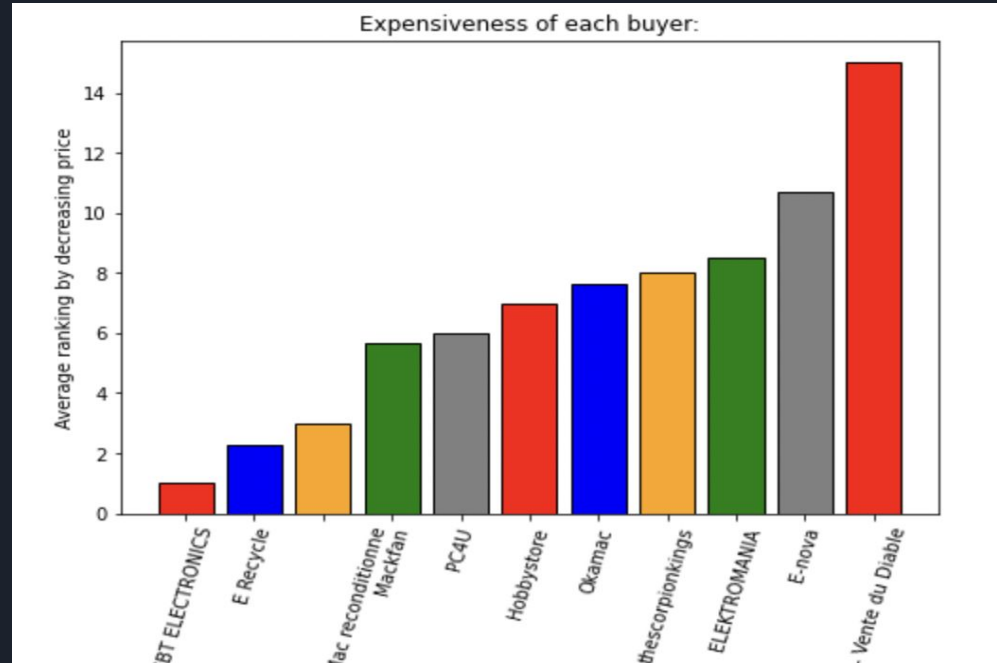
Data analysis

4) Does reputation of sellers have any impact on their sells?

Fig 4

Definition of expensiveness:

What we call 'expensiveness' here is the average ranking of the buyer for different models of computers, from the cheapest (1st) to the most expensive (last)
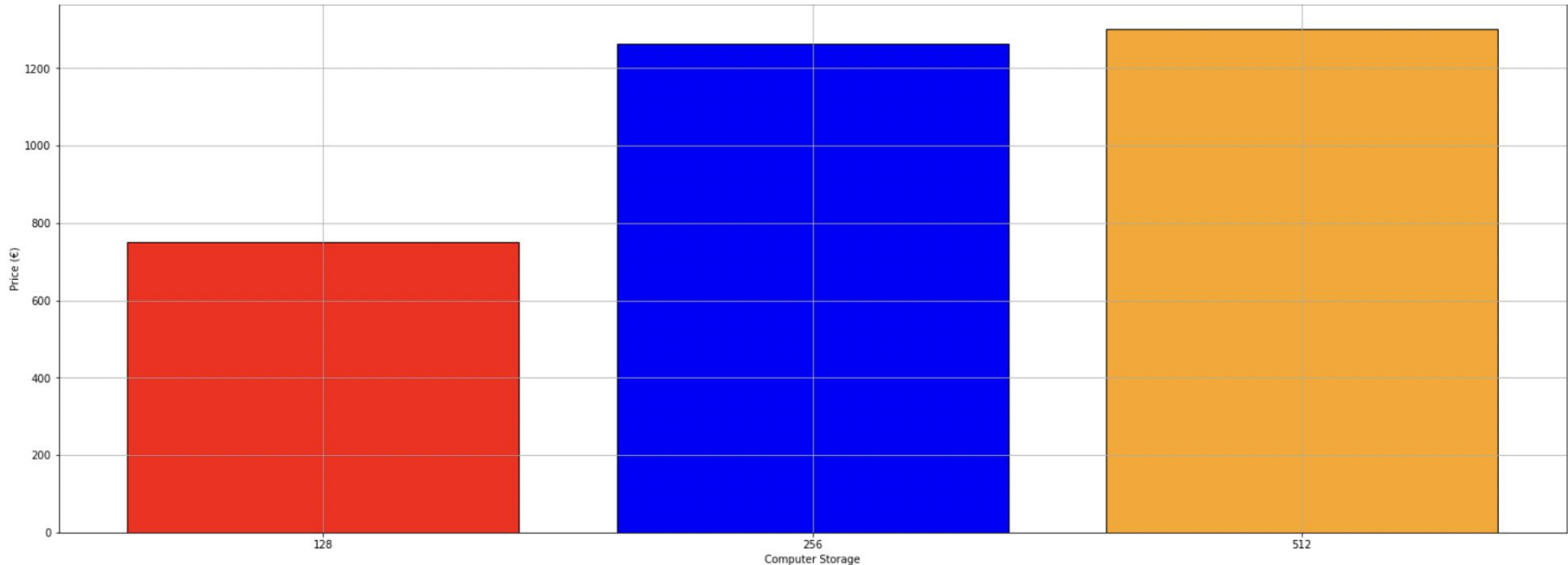
Data analysis

5) Evolution of price with computer storage
a) For a macbook pro

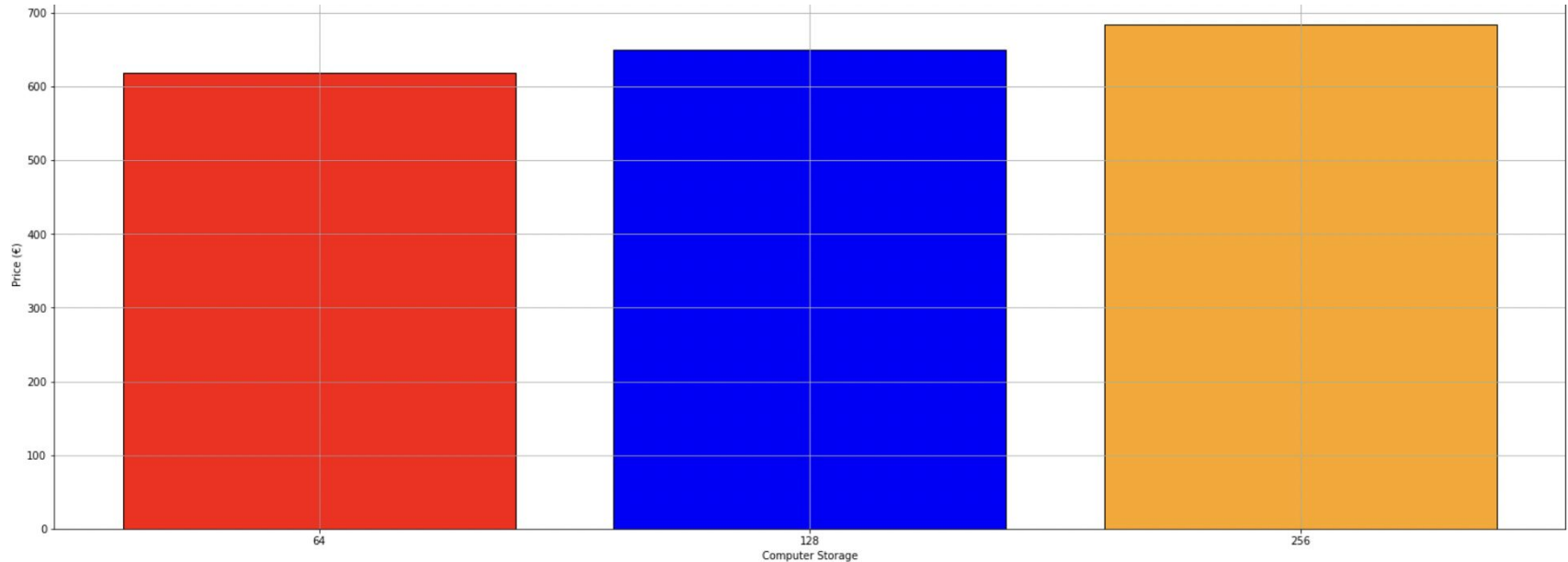Fig 5 — Evolution of price with computer storage for macbook pros

Data analysis

5) Evolution of price with computer storage
b) For a macbook air

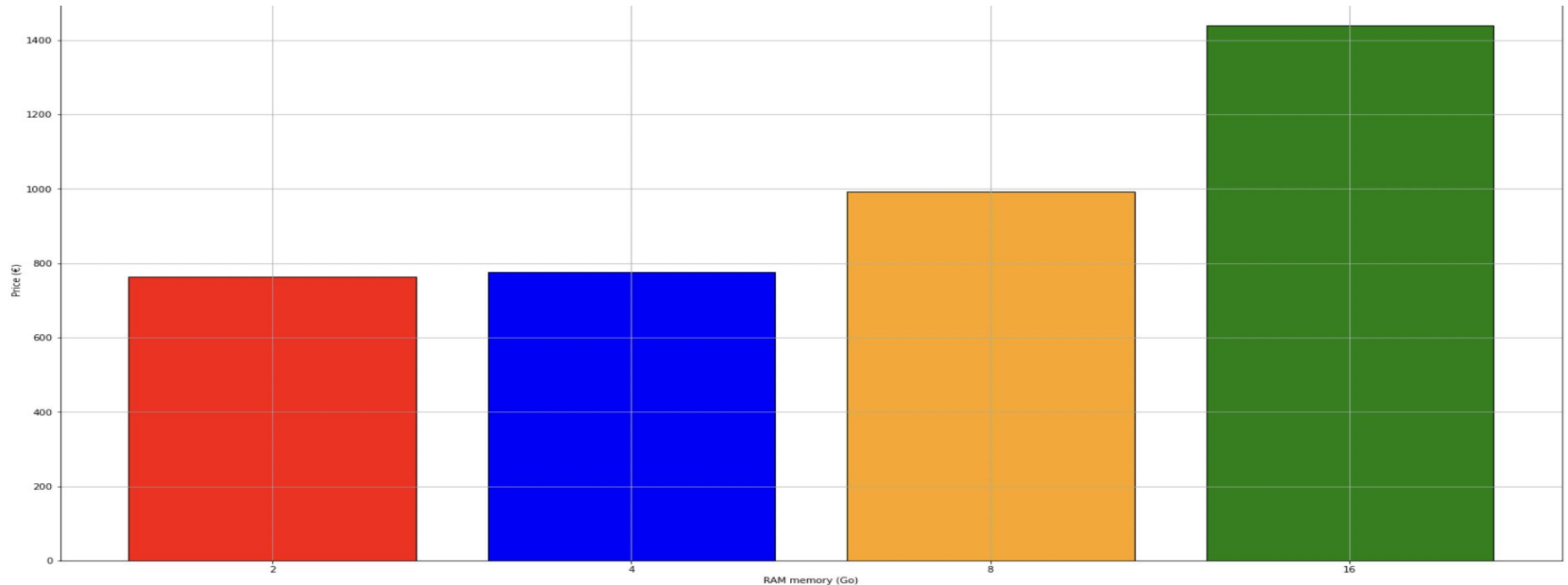Fig 6 — Evolution of price with computer storage for a macbook air

Data analysis

5 bis) Evolution of price with RAM
a) For a macbook pro

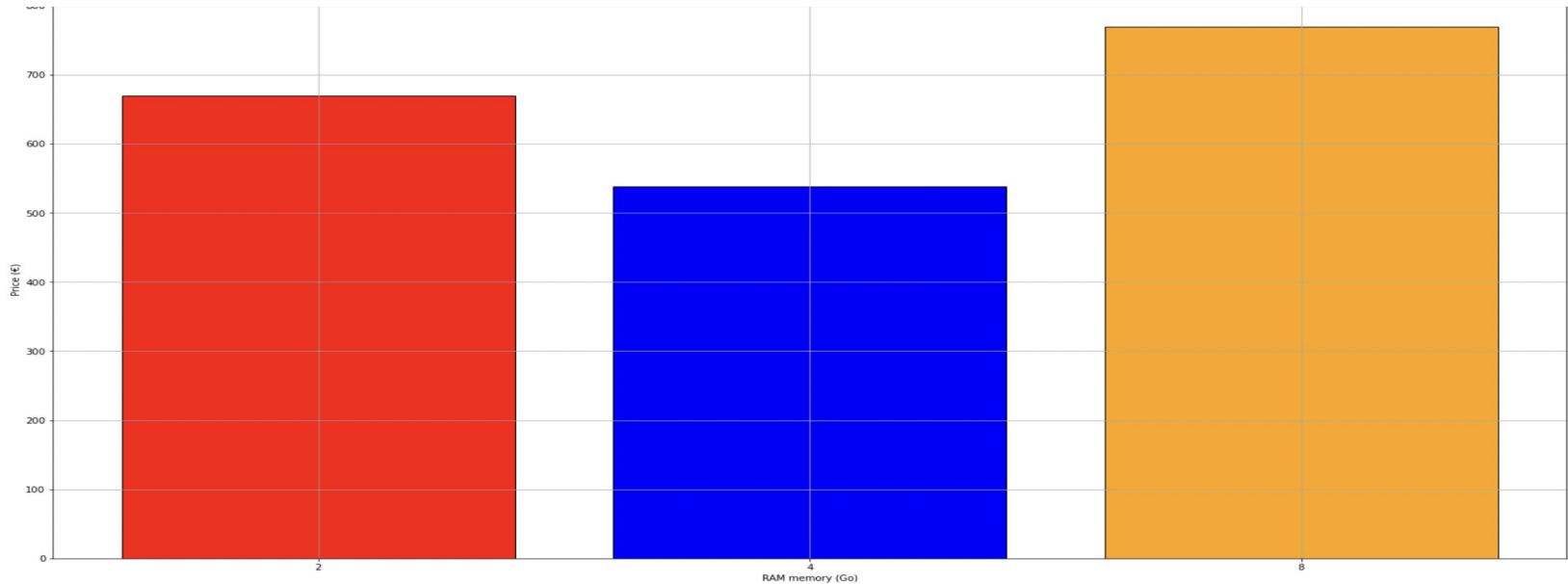Fig 7 — Evolution of price with RAM for a macbook pros

Data analysis

5 bis) Evolution of price with RAM
b) For a macbook air

Fig 8 — Evolution of price with RAM for a macbook pros

Data analysis

6) Complete analysis: price of the computer with both RAM and Storage

Fig 9   Regression of macbook pro laptops with both RAM and computer storage