

# **ECON 0150 | Economic Data Analysis**

*The economist's data analysis pipeline.*

## ***Part 1.3 | Data Structures***

# Part 1.3 | Data Structures

*...three main relationships between data points.*

The way we understand data depends on the relationship between the data points.

	Cross-Sectional	Time-Series	Panel Data
Focus	Multiple units, one time point	One unit, many times	Multiple units, many time points
Shape	Wide format	Long format	Long format
Ex.	Household income, 2025	US GDP, 10 years	Household income, 10 years

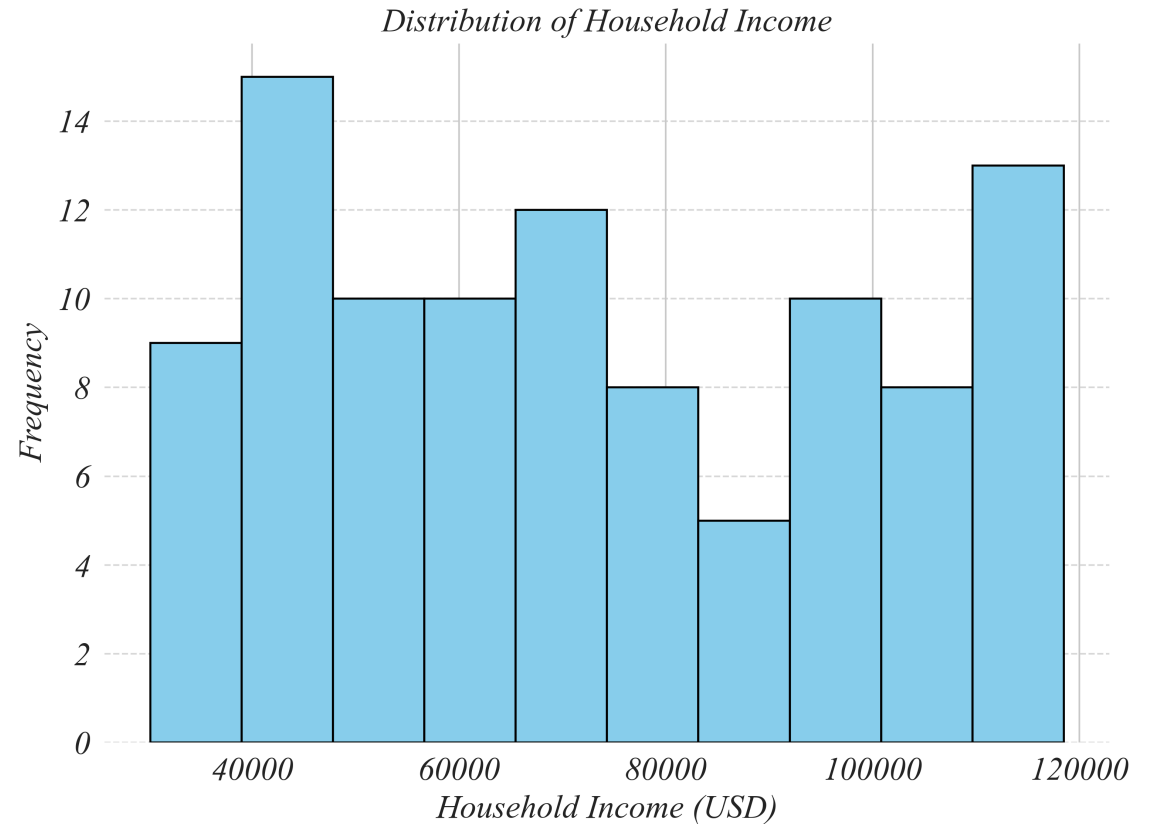
> *we'll introduce geographic data structures later.*

# Cross-Sectional (Numerical) Data

*Exercise: Summarize cross\_sectional\_numerical\_dataset.csv*

## Summary

- *Focus: distribution*
  - *Histogram*
  - *Boxplots*
  - *Jitters*

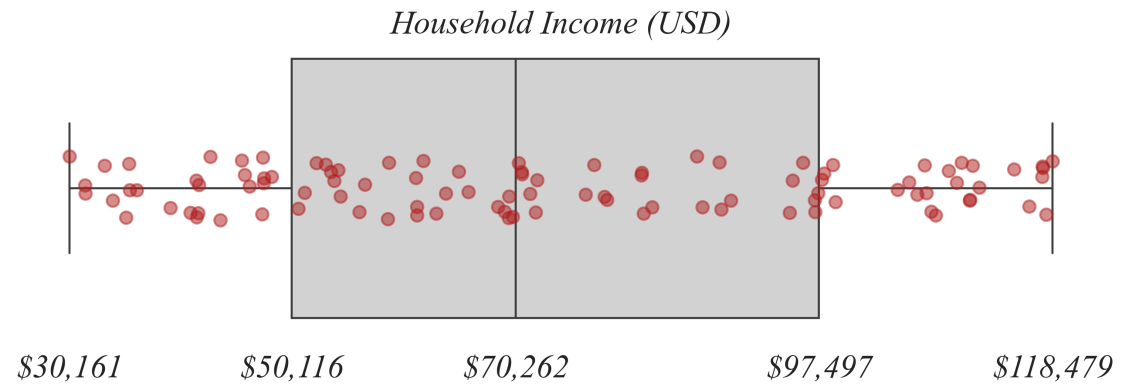


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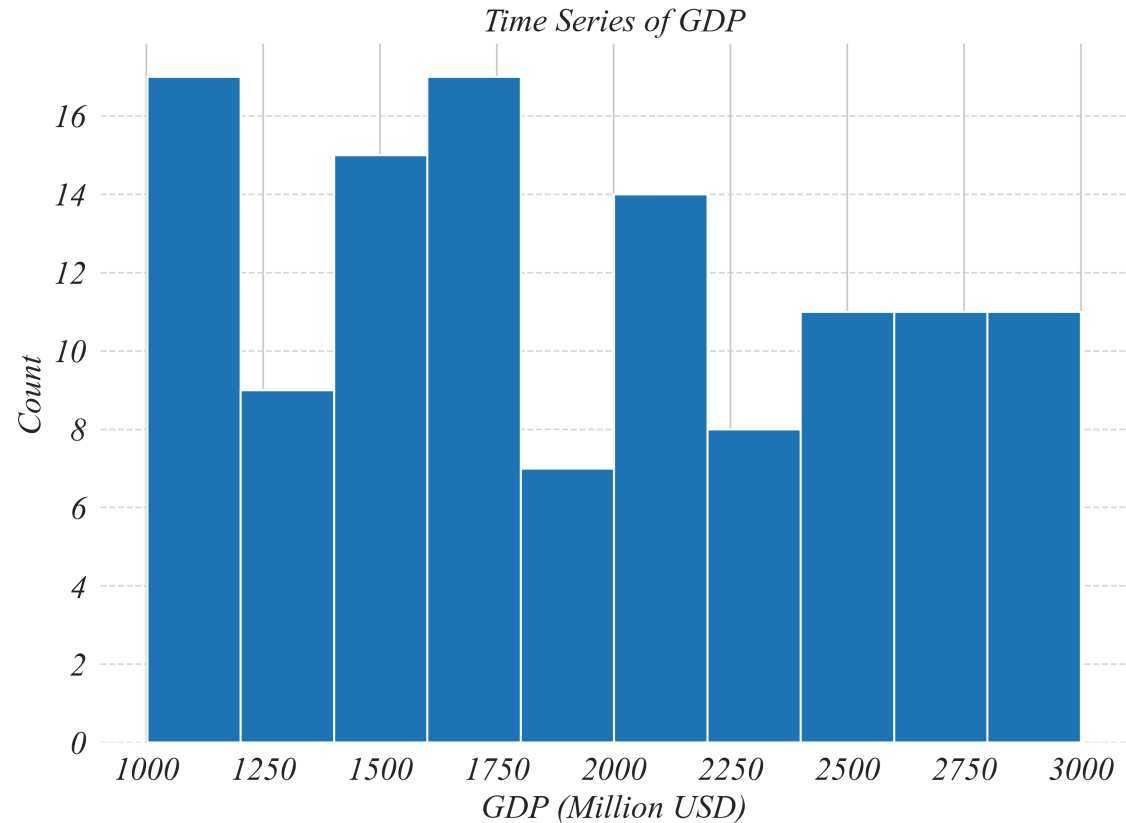


# Time-Series (Numerical) Data

*Exercise: Summarize time\_series\_numerical\_dataset.csv*

## Summary

- *Show: distribution*
  - *Histogram*
  - *Boxplots*
  - *Jittered Scatters*
- *Focus: time-path*
  - *Linegraph*

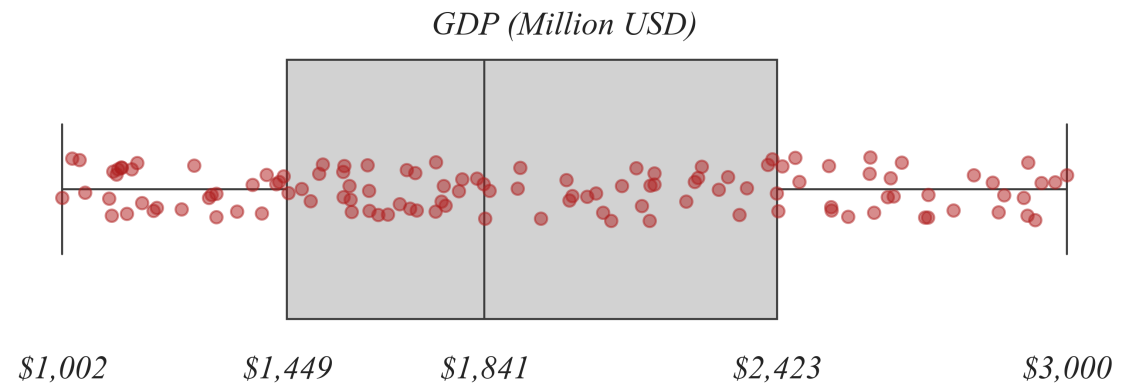


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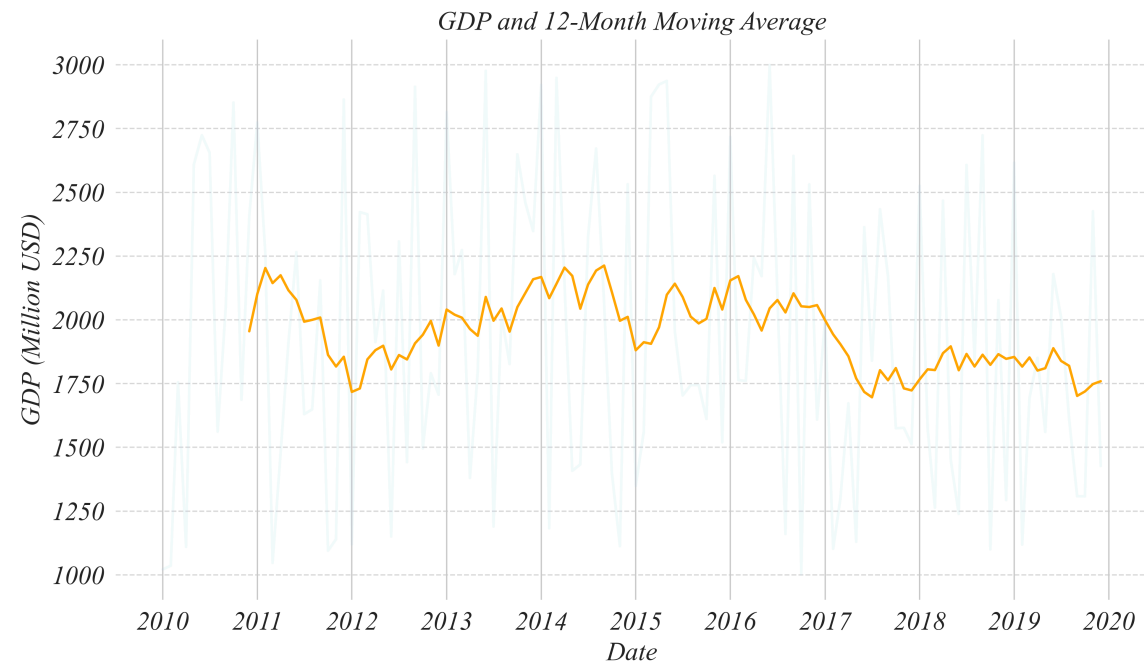


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*Exercise: Summarize time\_series\_numerical\_dataset.csv*

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- *Show: distribution*
  - *Histogram*
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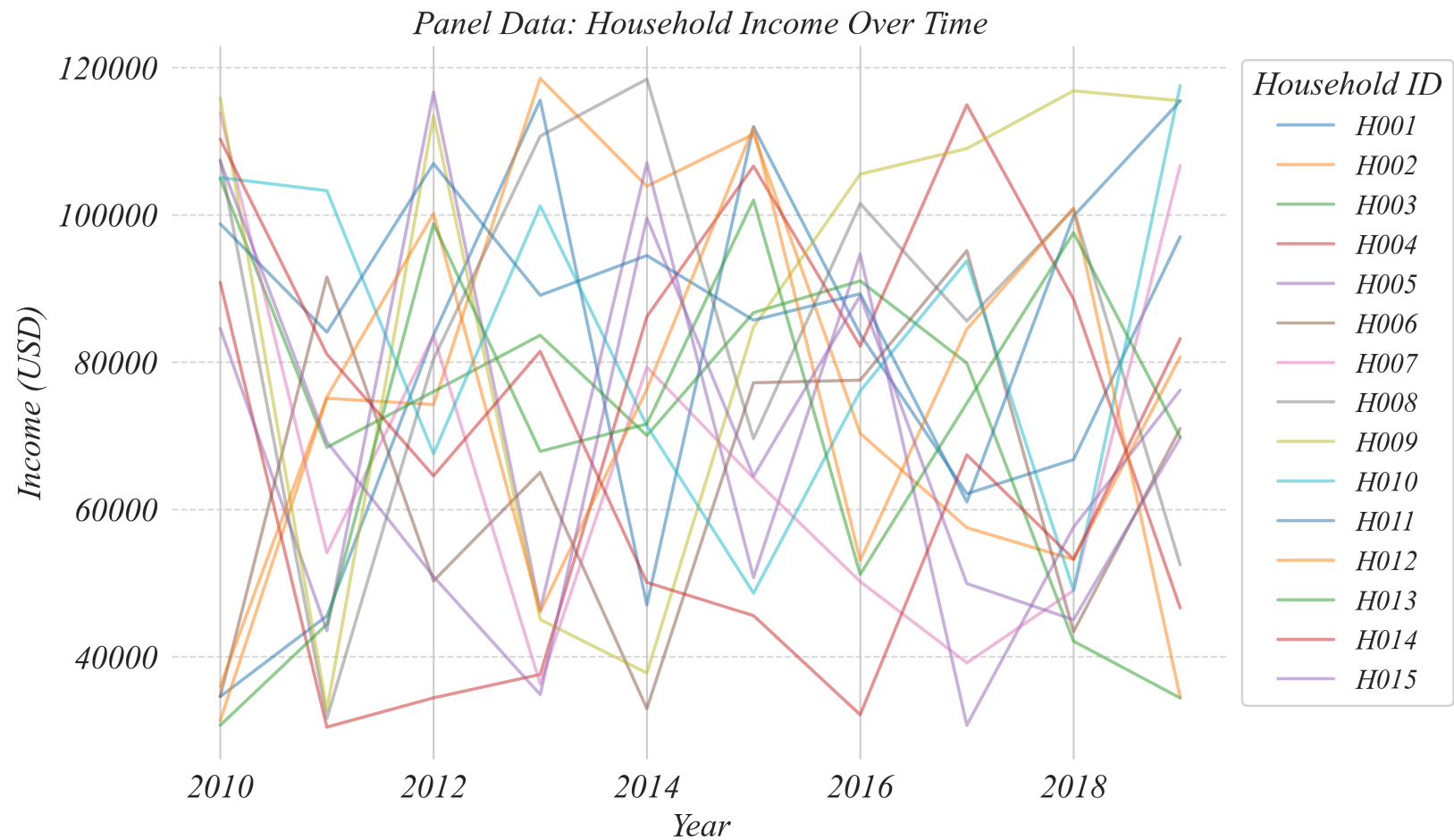
# Panel (Numerical) Data

*Exercise: Summarize panel\_numerical\_dataset.csv*



# Panel (Numerical) Data

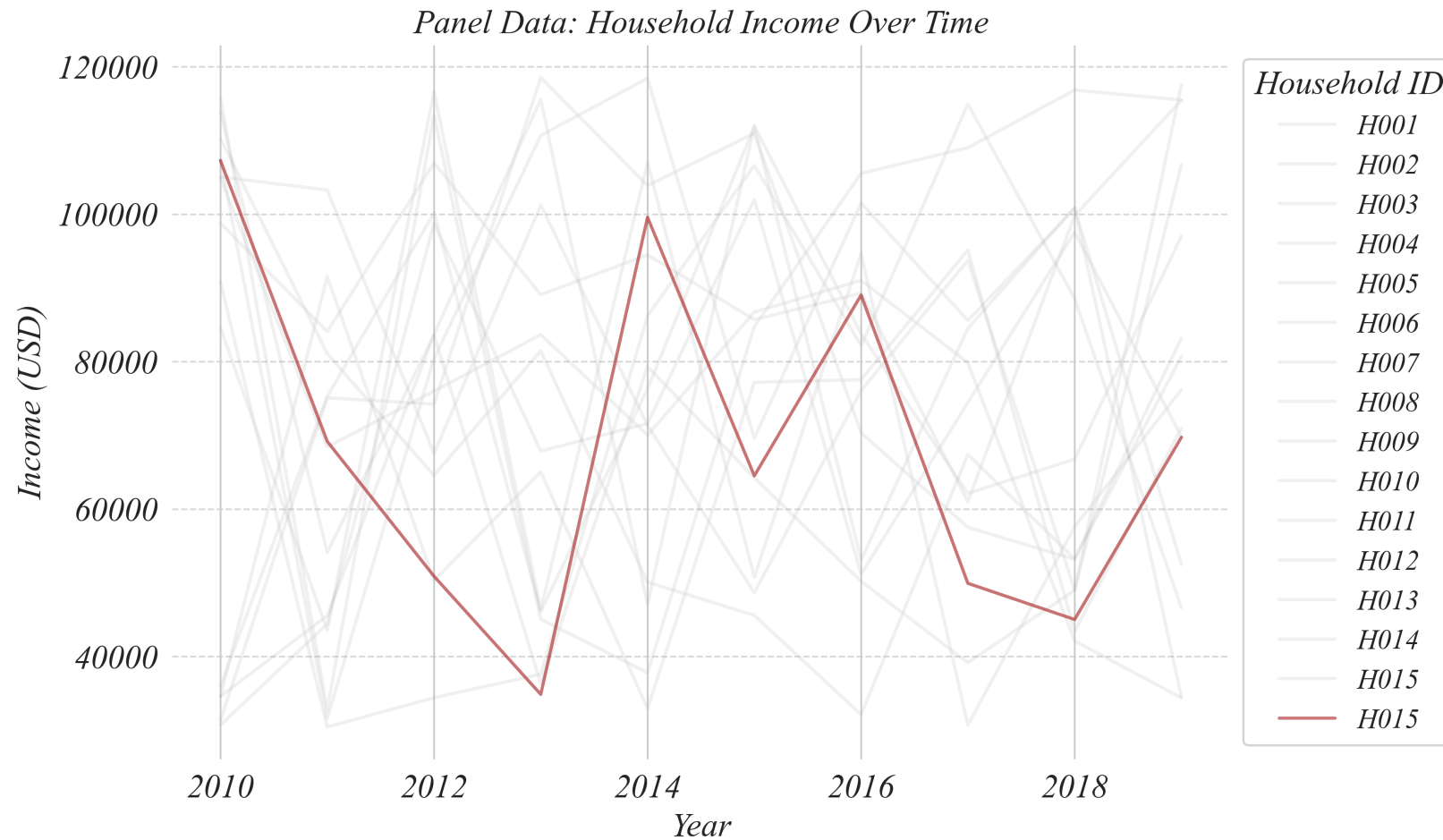
*Exercise: Summarize panel\_numerical\_dataset.csv*



> *not so great*

# Panel (Numerical) Data

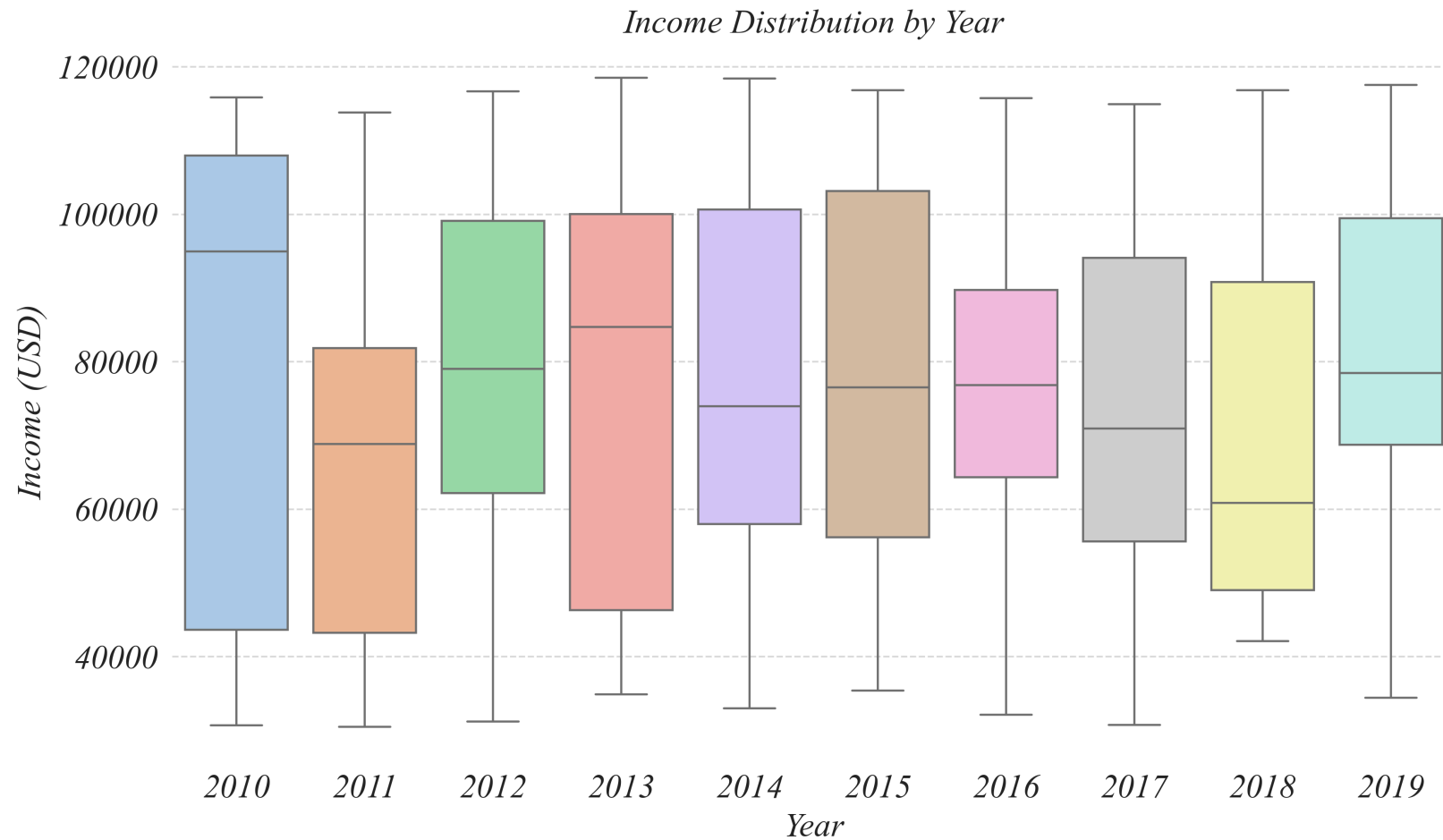
*Exercise: Summarize panel\_numerical\_dataset.csv*



> a little better

# Panel (Numerical) Data

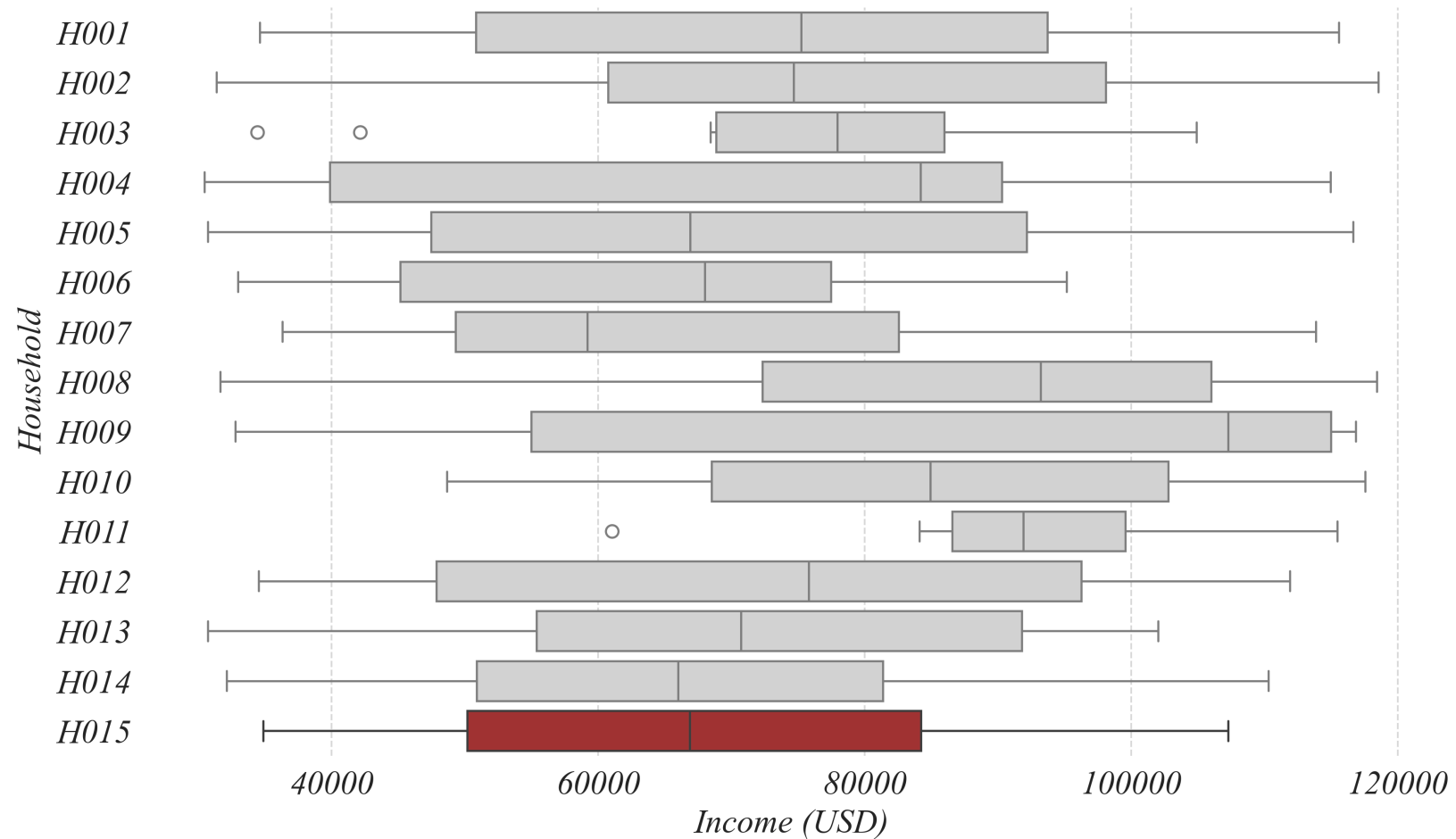
*Exercise: Summarize panel\_numerical\_dataset.csv*



> *shows cross sectional variation through time*

# Panel (Numerical) Data

*Exercise: Summarize panel\_numerical\_dataset.csv*



> shows variation within the household