



Bar and Line Charts

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Which Type of Graph Should I Use?



| Pie Charts

- Comparing parts of a whole

| Bar Charts

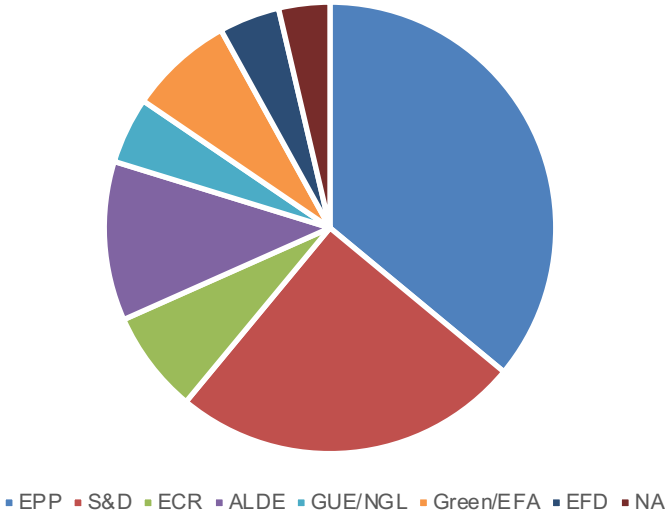
- Comparing between groups or over time

| Line Chart

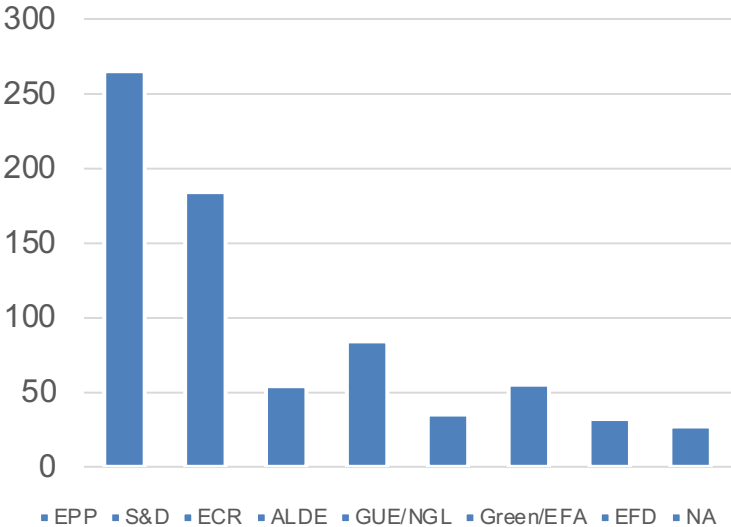
- Changes over time

Non-Time Series Data

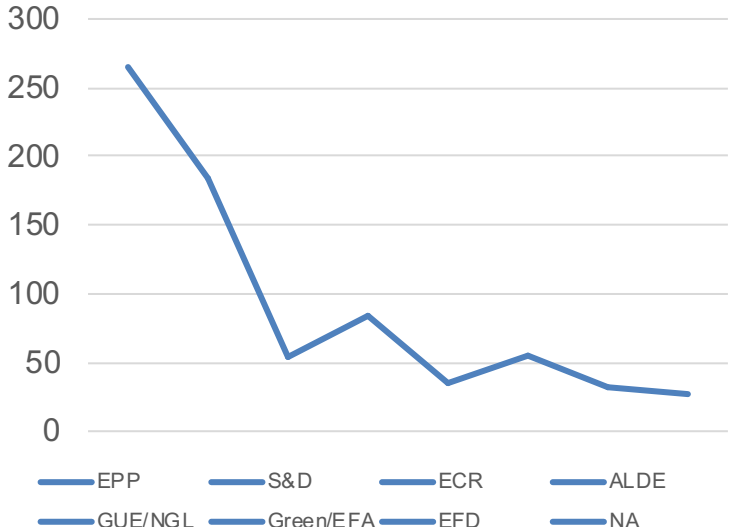
European Parliament Party Distribution



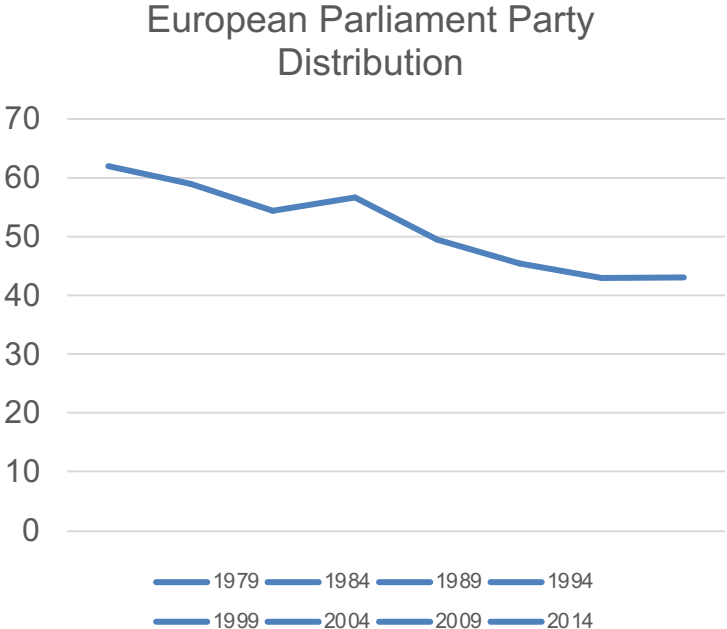
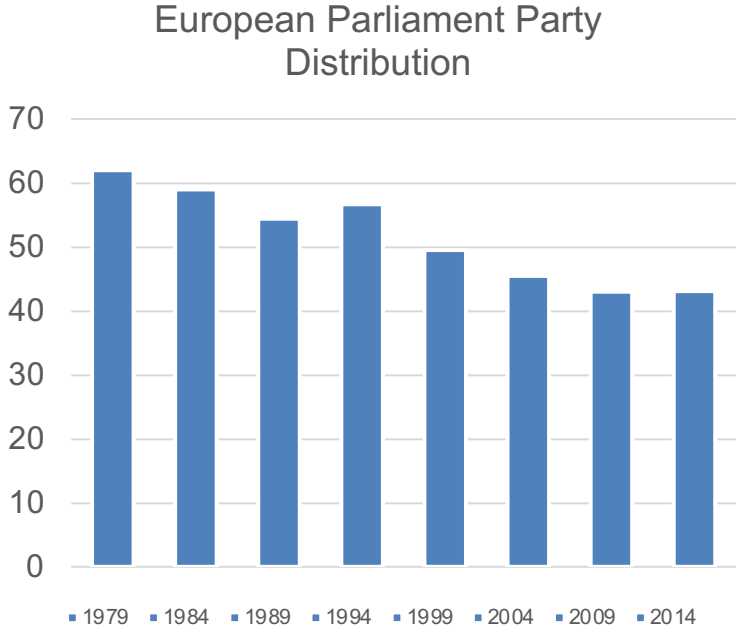
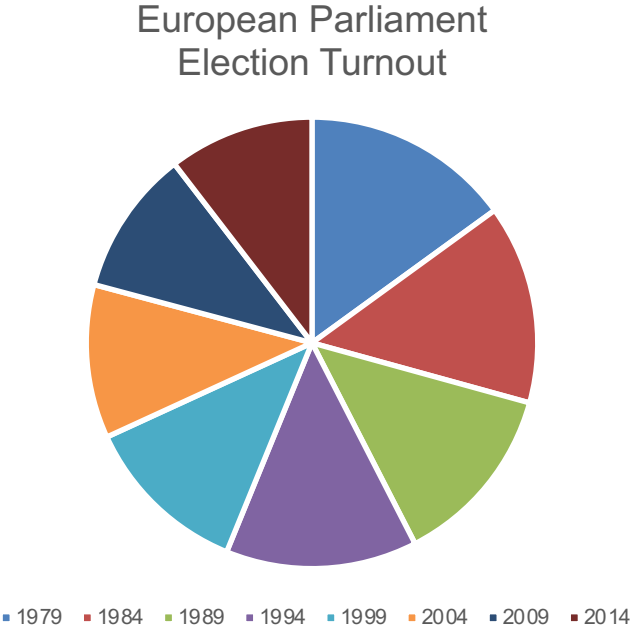
European Parliament Party Distribution



European Parliament Party Distribution

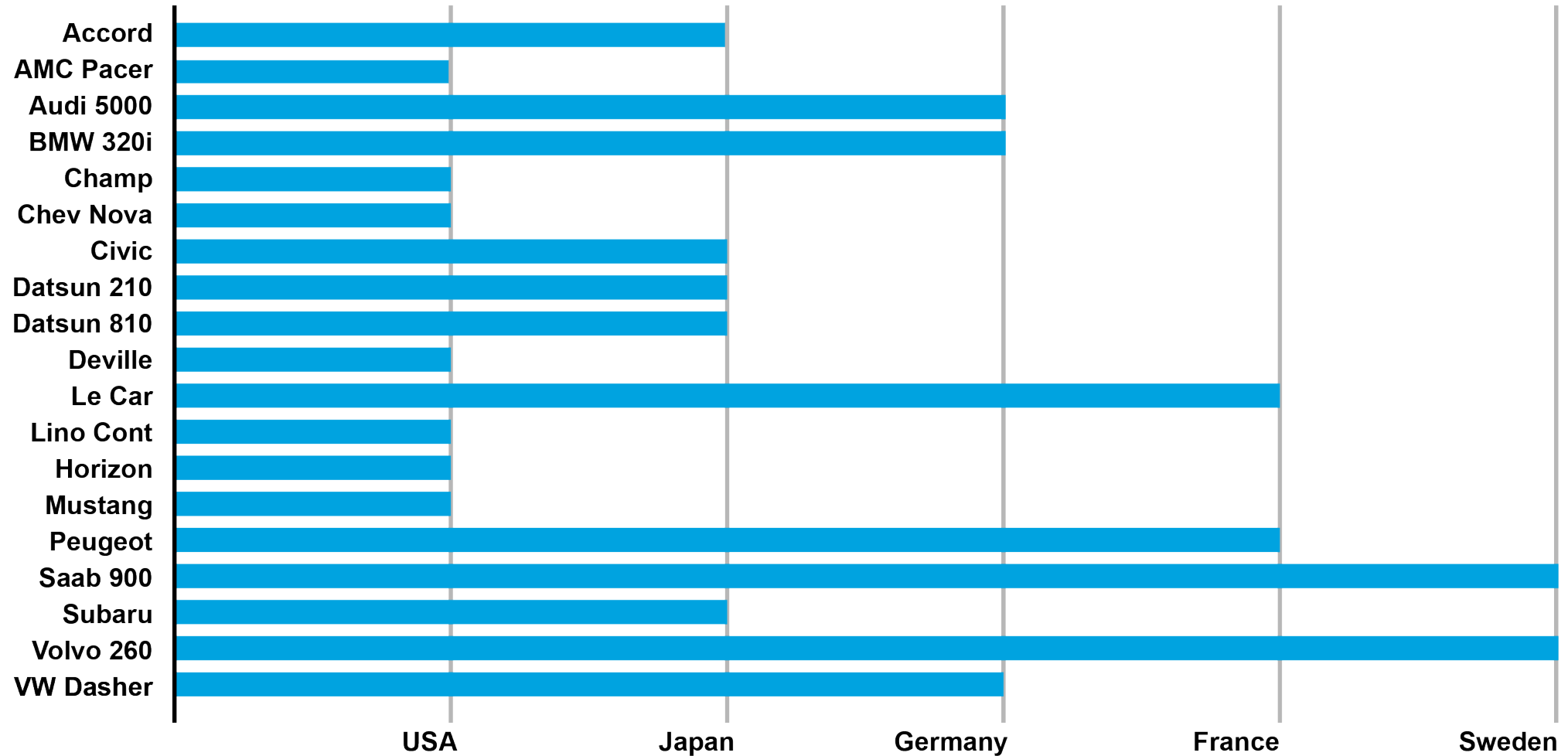


Time Series Data



When to Not Use Bar Charts

Car Nationality for 1979

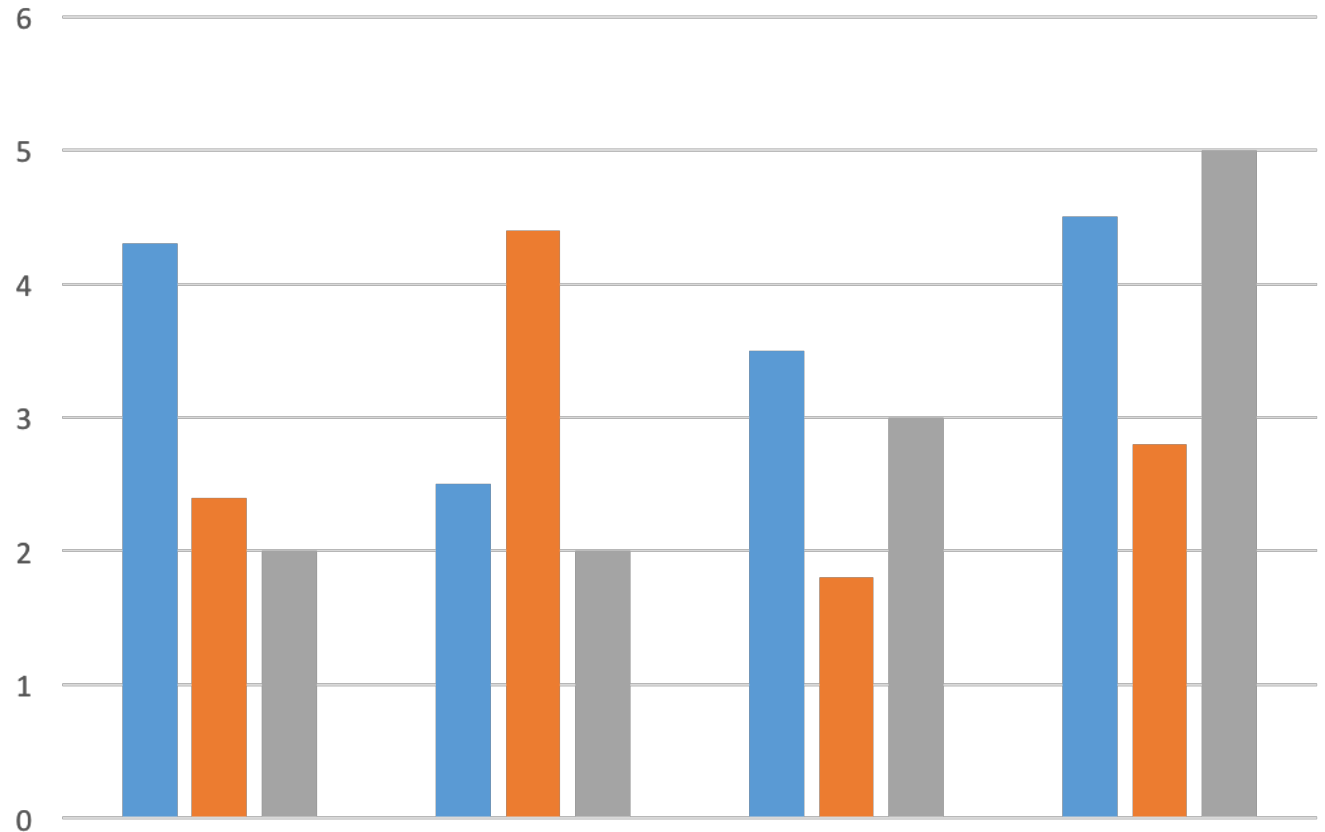


Graph Aspect Ratios

Perception of trends and patterns is heavily influenced by the aspect ratio.

Aspect ratios affects:

- Densities
- relative distances
- orientations

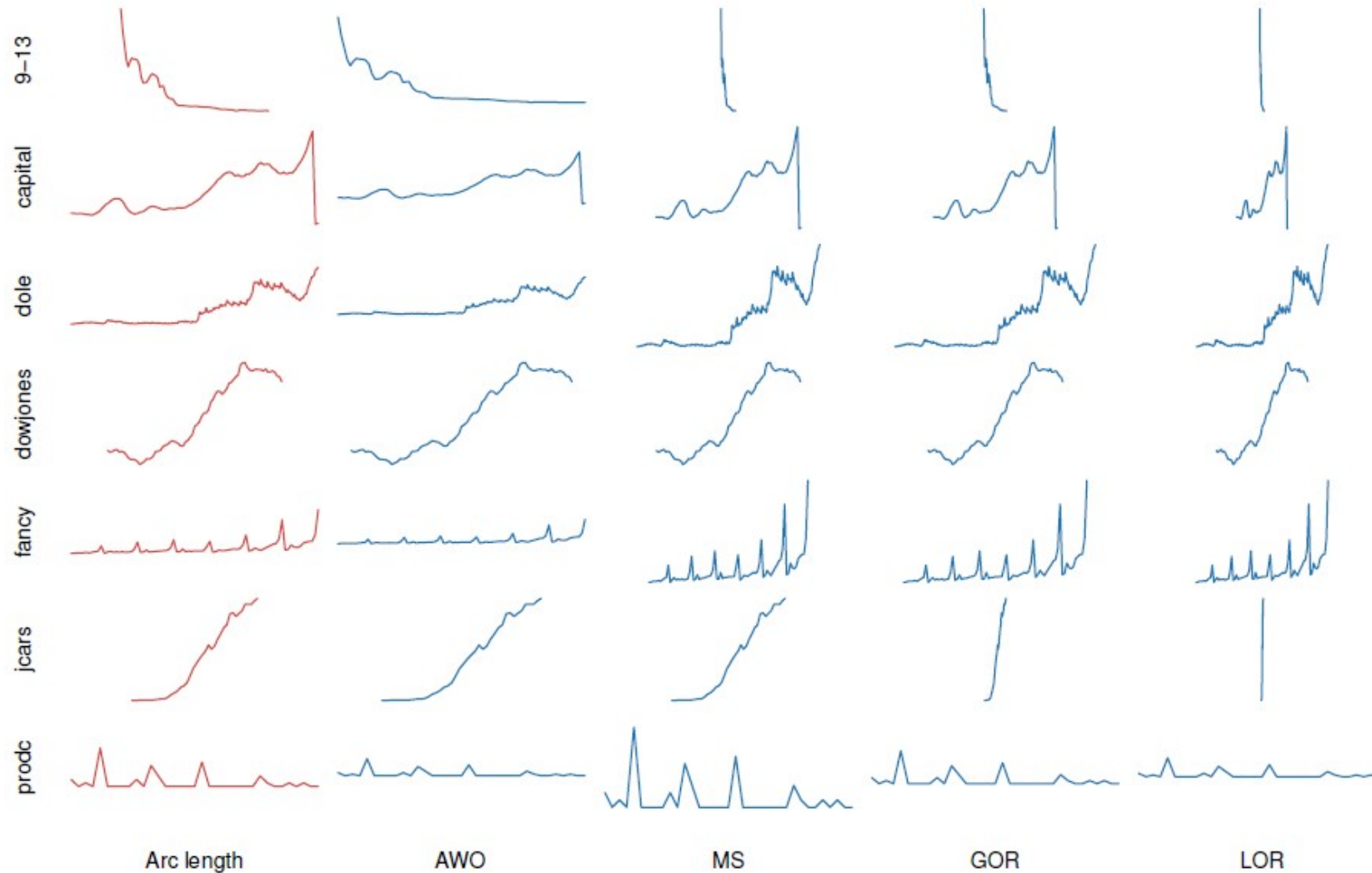


Aspect ratio: $a = \text{width/height}$

Arc Length-Based Aspect Ratio

$$\max_a \frac{\sum_i \sum_j |\sin \theta_{ij}| l_i(a) l_j(a)}{\sum_i \sum_j l_i(a) l_j(a)}$$

Arc Length-Based Aspect Ratio Selection





Aspect Ratios

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