

Visual Display of Quantitative Information

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Why?

- ★ Explore data
- ★ Reveal information in data (distribution, relationships, ...)
- ★ Make a point
- ★ Illustrate an idea
- ★ Give an example
- ★ Condense information
- ★ Provide interest
- ★ ...
- ✓ > 1 of the above

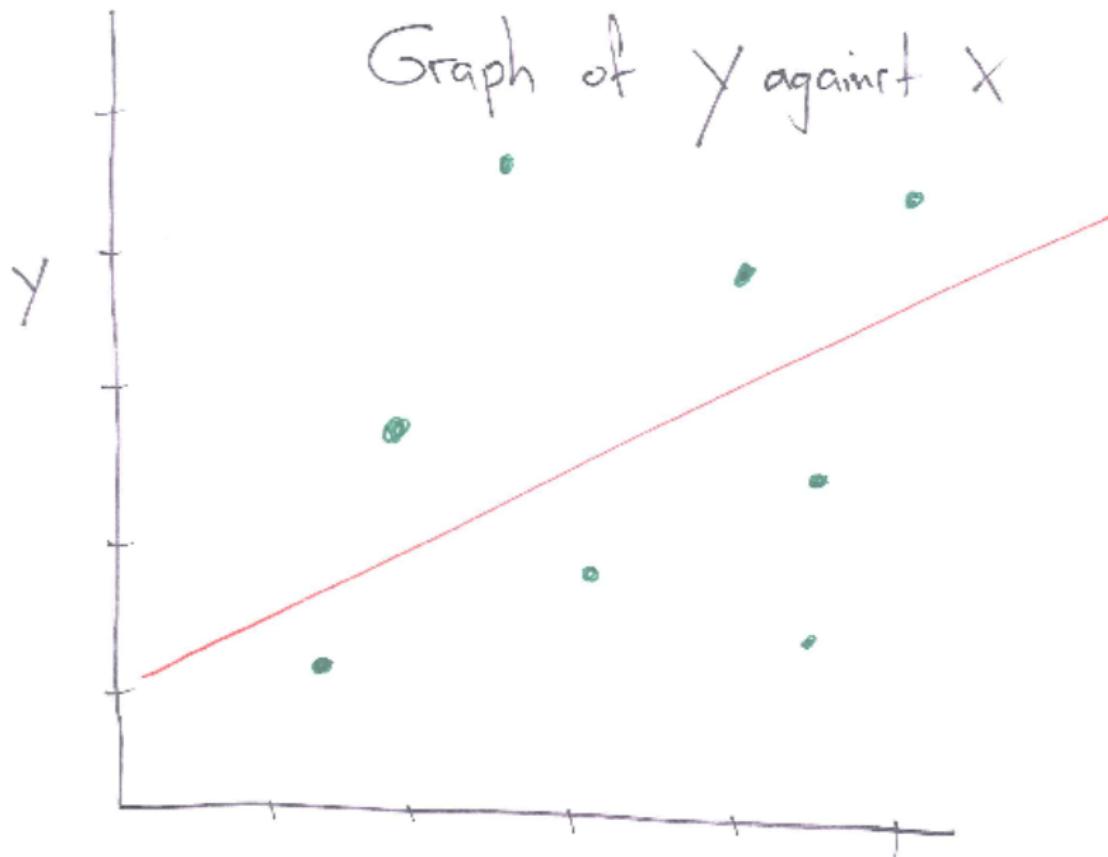


Considerations

- ★ Big picture (focus + context)
- ★ Size
- ★ Location
- ★ Title, caption
- ★ Uncertainties
- ★ Origin
- ★ Scale
- ★ Outliers
- ★ Labels
- ★ Significant figures
- ★ Artifacts (avoid bitmaps, . . .)
- ★ Avoid misleading



Example



Example

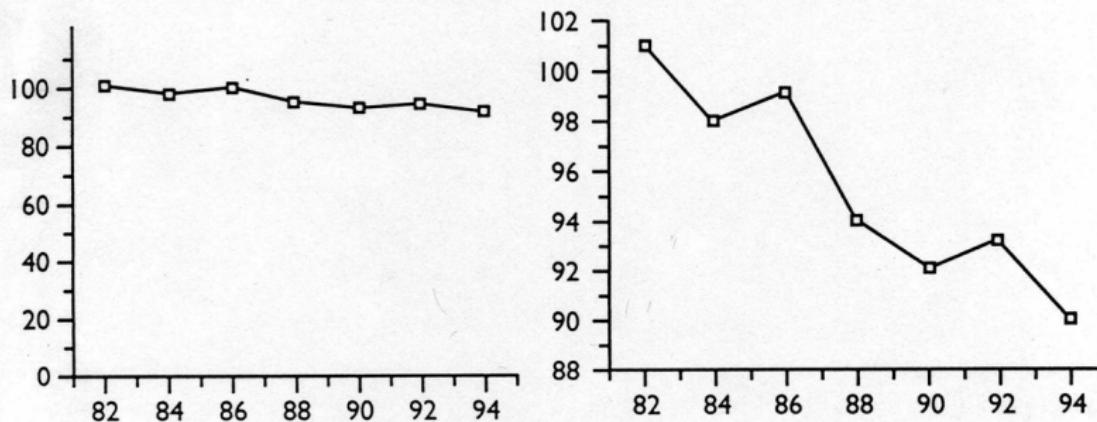


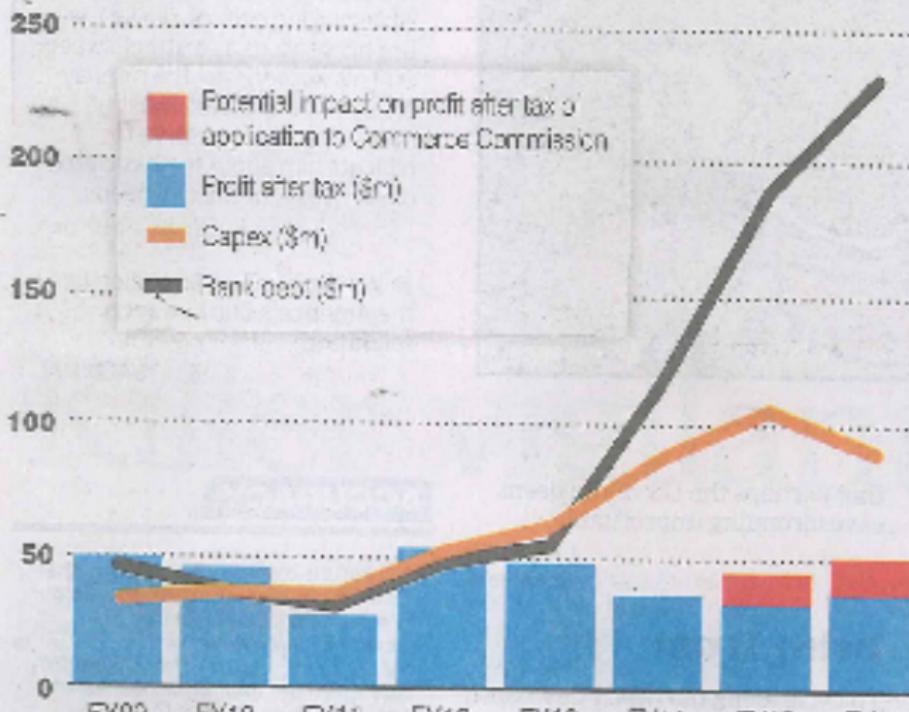
Figure 12.21: Capital City Pollution Index, 1982–1994 (July averages)



Example

Potential Gains

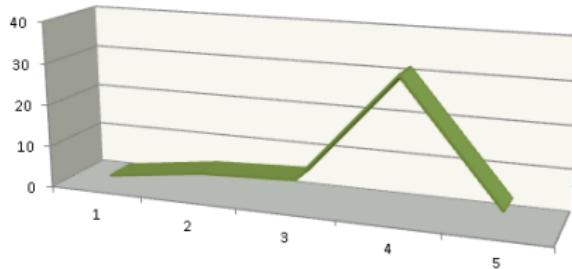
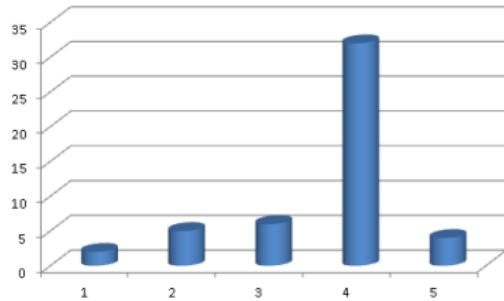
Orion's profit will rise by more than a third if its proposed price increases are approved.



Example



Example



Foo
2
5
6
32
4



Tables

- ★ Good for showing exact (numeric) values
- ★ Multiple local comparisons practicable
- ★ Supplement text explanation
- ★ Not so good for trends
- ★ Left-justify text
- ★ Right-justify numbers (align decimal points)
- ★ Significant figures

- ★ Avoid data prisons (too many grid bars)
- ★ Unnecessary for few data values—minimum viable size?



Example

How Different Groups Voted for President

Based on 12,782 interviews with voters at their polling places. Shown is how each group divided its vote for President and, in parentheses, the percentage of the electorate belonging to each group.

	CARTER	REAGAN	ANDERSON	CARTER-FORD in 1976
Democrats (43%)	66	26	6	77 - 22
Independents (23%)	30	54	12	43 - 54
Republicans (28%)	11	84	4	9 - 90
Liberals (17%)	57	27	11	70 - 26
Moderates (46%)	42	48	8	51 - 48
Conservatives (28%)	23	71	4	29 - 70
Liberal Democrats (9%)	70	14	13	86 - 12
Moderate Democrats (22%)	66	28	6	77 - 22
Conservative Democrats (8%)	53	41	4	64 - 35
Politically active Democrats (3%)	72	19	8	—
Democrats favoring Kennedy in primaries (13%)	66	24	8	—
Liberal Independents (4%)	50	29	15	64 - 29
Moderate Independents (12%)	31	53	13	45 - 53
Conservative Independents (7%)	22	69	6	26 - 72
Liberal Republicans (2%)	25	66	9	17 - 82
Moderate Republicans (11%)	13	81	5	11 - 88
Conservative Republicans (12%)	6	91	2	6 - 93
Politically active Republicans (2%)	5	89	6	—
East (32%)	43	47	8	51 - 47
South (27%)	44	51	3	54 - 45
Midwest (20%)	41	51	6	48 - 50
West (11%)	35	52	10	46 - 51



For further ideas . . .

- ★ Books by Tufte e.g. *The Visual Display of Quantitative Information*
- ★ <http://www.datavis.ca/gallery>
- ★ <http://www.informationisbeautiful.net>
- ★ <http://memebase.cheezburger.com/graphjam>
- ★ COSC415
- ★ ...



Summary

<http://memebase.cheezburger.com/graphjam>

