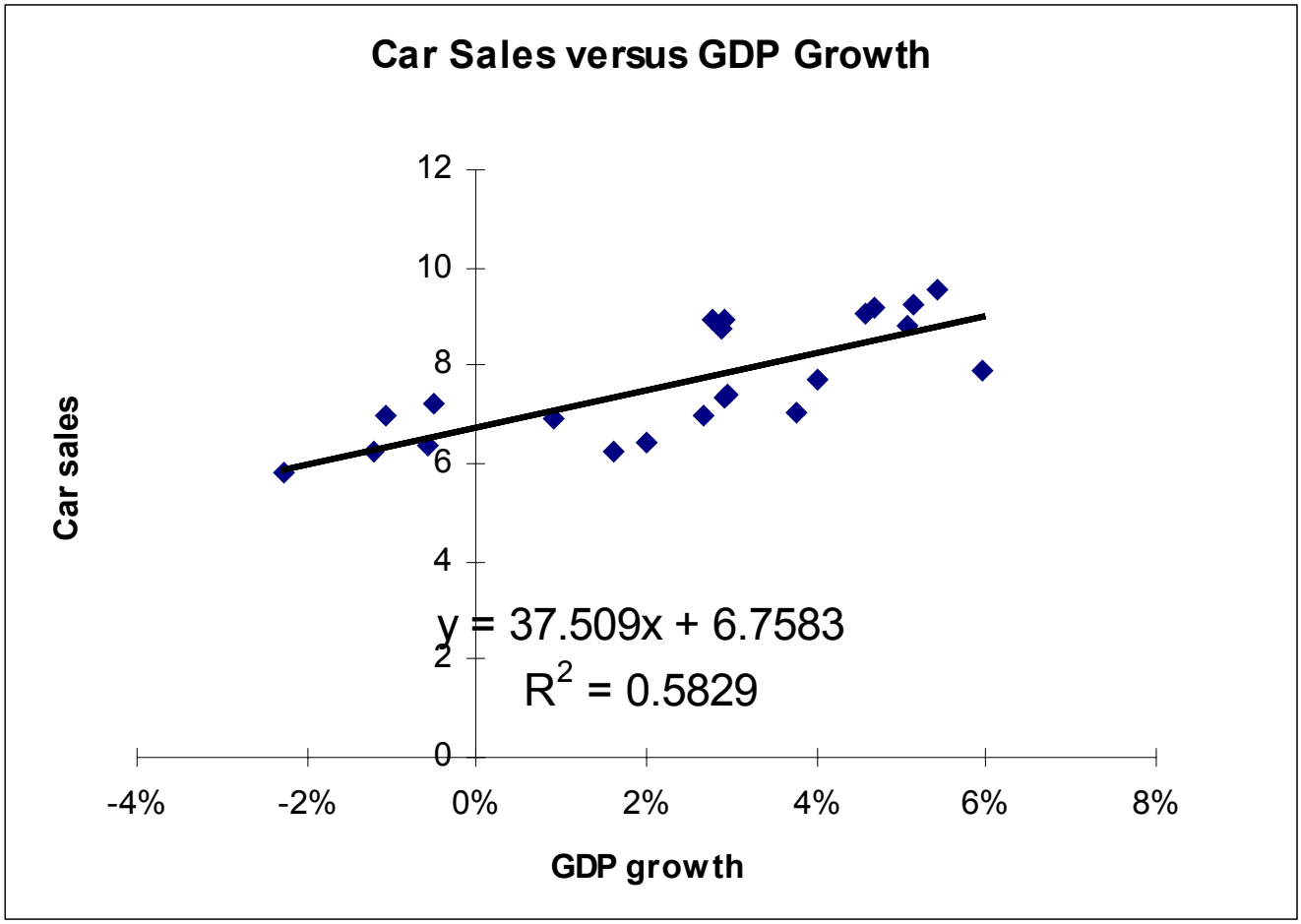
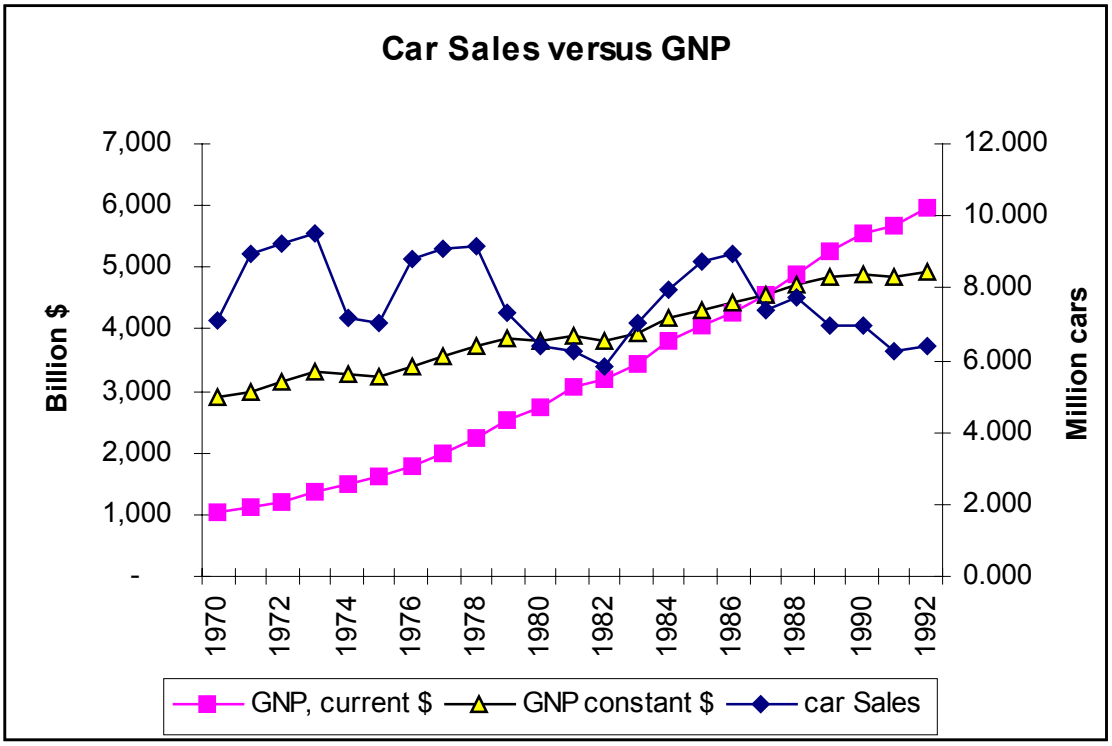
AN EXAMPLE FROM CHAPTER 5

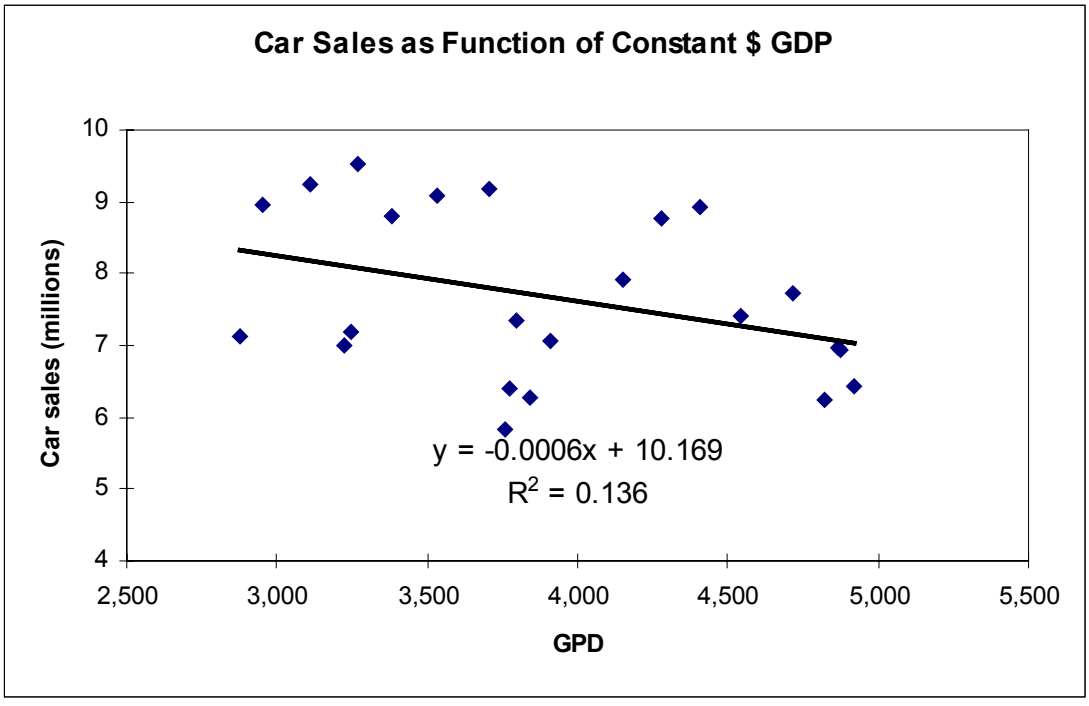
Can we predict total car sales based on GNP?
An exercise in Data Mining

The Final Version of the Model



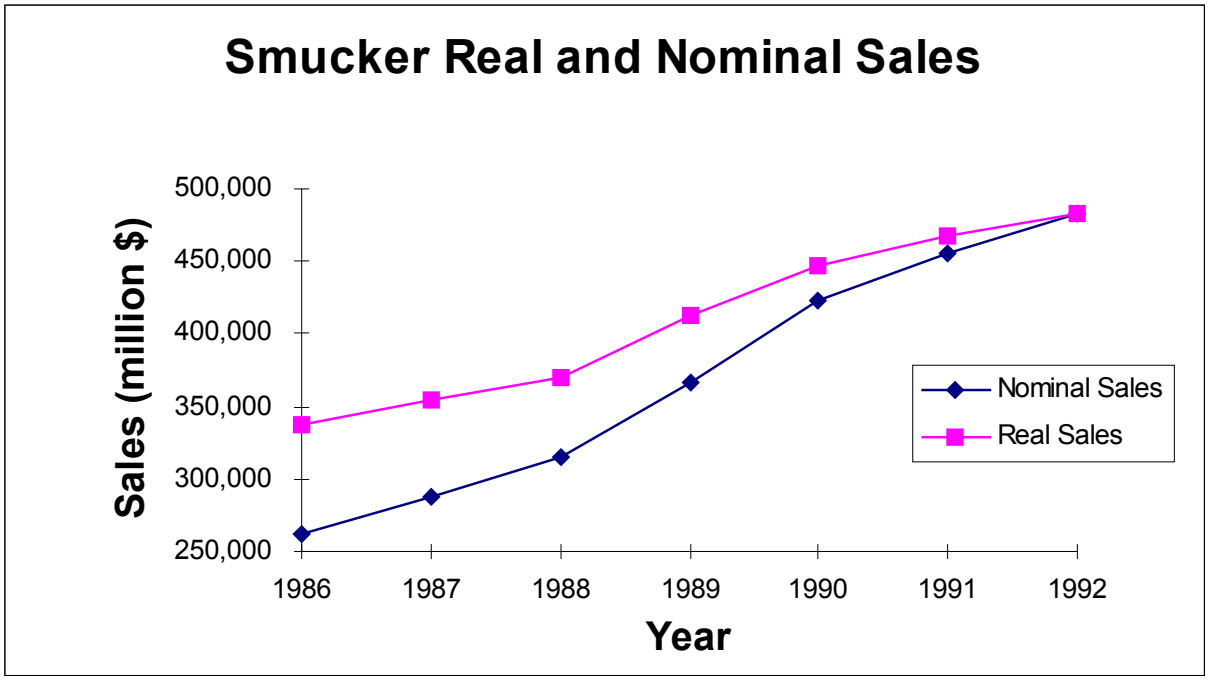
THE DATA MINING WHICH PRECEDED THIS VERSION

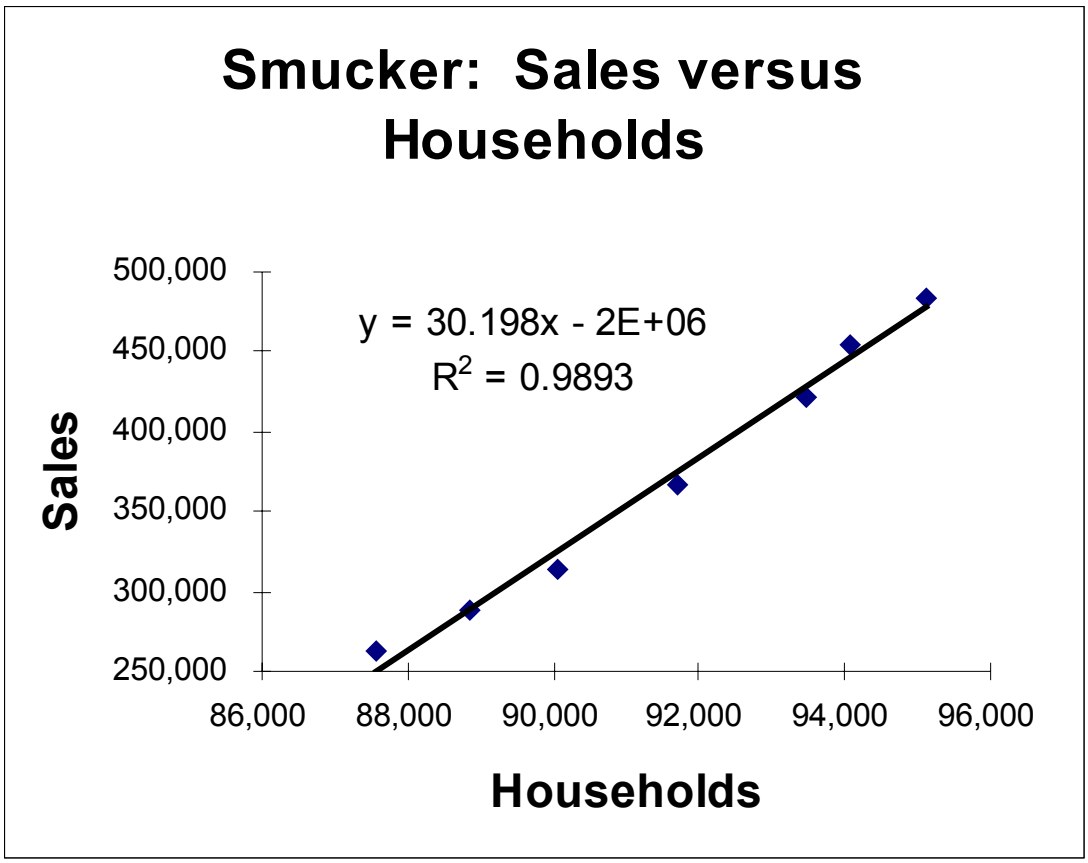




PREDICTING SALES FOR J.M. SMUCKER (Chapter 7)

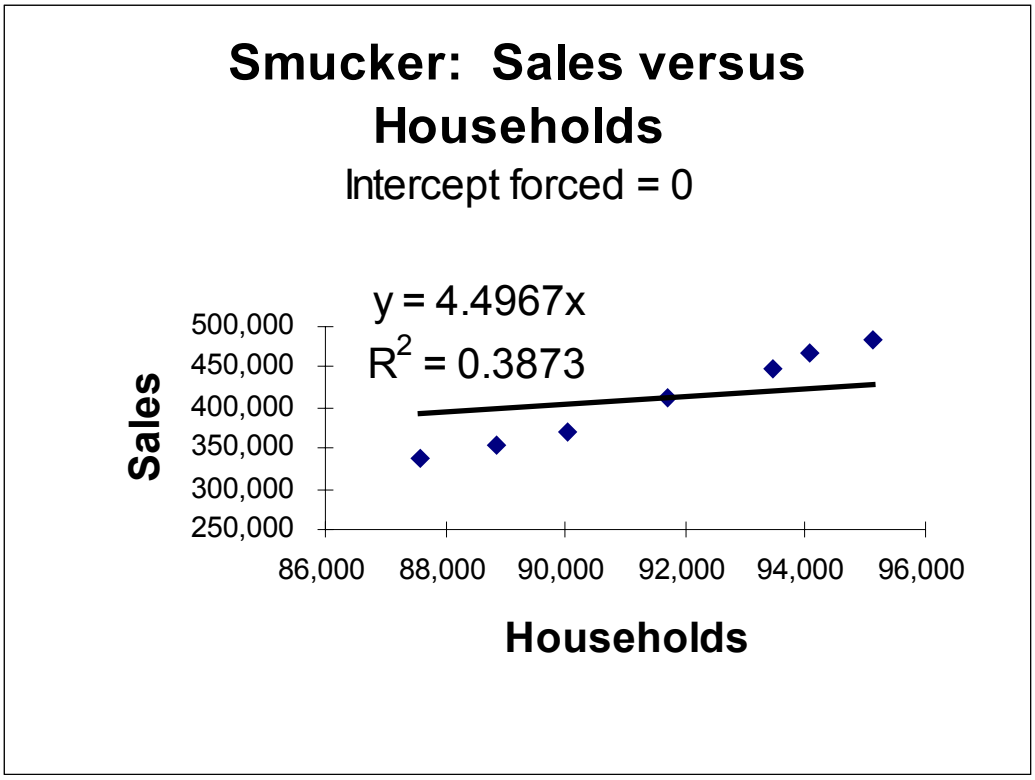
J.M. Smucker Company							
Some data on Sales, the CPI, and the number of households							
	1986	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**
CPI	110.8	115.7	120.8	126.4	134.2	138.2	142.2
Nominal Sales	262,802	288,263	314,245	366,855	422,357	454,976	483,472
Real Sales	337,278	354,287	369,914	412,712	447,535	468,145	483,472
Households	87,578	88,871	90,046	91,708	93,456	94,076	95,102
Household growth		1.48%	1.32%	1.85%	1.91%	0.66%	1.09%



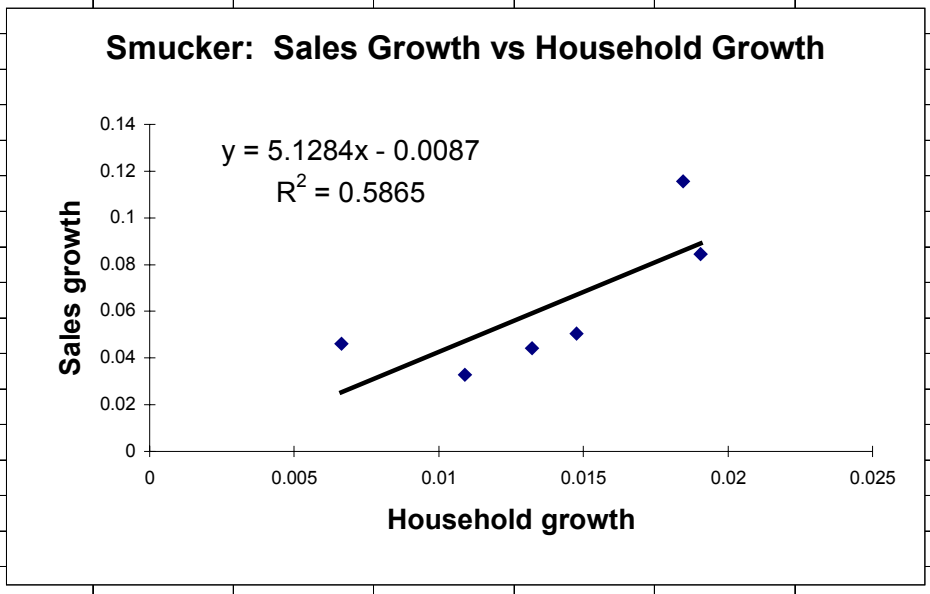

Smucker: Sales versus Households
y = 30.198x - 2E+06
R2 = 0.9893
Sales
500,000
450,000
400,000
350,000
300,000
250,000
86,000
88,000
90,000
92,000
94,000
96,000
Households

WHAT'S WRONG WITH THIS?

- **The intercept?**
- **The slope? (Think about Smucker's market share.)**
- **The R^2 ?**



ESTIMATING SMUCKER SALES GROWTH--A BETTER WAY							
	1986	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**
CPI	110.8	115.7	120.8	126.4	134.2	138.2	142.2
Net sales	262,802	288,263	314,245	366,855	422,357	454,976	483,472
Households	87,578	88,871	90,046	91,708	93,456	94,076	95,102
Household growth		1.48%	1.32%	1.85%	1.91%	0.66%	1.09%
Real Sales	337,278	354,287	369,914	412,712	447,535	468,145	483,472
Real Sales growth		5.04%	4.41%	11.57%	8.44%	4.61%	3.27%



Even so, we have to make allowances for eventual slower growth rate. 5% Sales Growth for each 1% household growth is unsustainable.