



The Paradox of Price

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Price is a singularly interesting variable in that it is neither single nor a true variable. In isolation, price means little. Analyzing price apart from the essence of the offer can be misleading. As challenging as it can be, price testing should encompass as broad a mix of marketing elements as possible. Price is easy to change, but its impact is difficult to clarify.

Price has the statistical challenge of not behaving like normal variables. Statistically, “variables” data are numbers measured on a continuous scale, like temperature and time. Price, in concept, is continuous, but in reality—the reality of customer perception—is not. The *perceived* difference between \$9.43 and \$9.45 is not the same as \$9.99 versus \$10.01. Price elasticity is usually not linear or a smooth curve, but an inconsistent stair-step relationship. Response may stay constant as you increase the subscription price from, say, \$15 to \$19, but then may drop dramatically at \$20. Also, since price is irregular, statistical analyses can have greater error than one might expect. In addition, price testing is surprisingly difficult, as you try to uncover its complex, ever-changing relationship to sales and other marketing-mix elements.

The following test shows how a deeper analysis of price can uncover its real-world complexity.

Newsstand Price Test

A publisher working to optimize both single-copy sales and subscriptions wanted to test the relationship among cover price, subscription price (via blow-ins), and the number of copies placed on the newsstand (draw). The three elements were tested at three levels as shown below (note: specific price points have been disguised, but the results are accurate).

<u>Test element</u>	<u>(-) Low level</u>	<u>(0) Centerpoint</u>	<u>(+) High level</u>
A: Cover price	\$3.99	\$4.99	\$5.99
B: Subscription price	\$1.00	\$2.00	\$3.00
C: Number of copies on newsstand	1/3rd less	Current	1/3rd more

Out of the 27 possible combinations, 9 “recipes” were tested according to the test design shown on the next page.

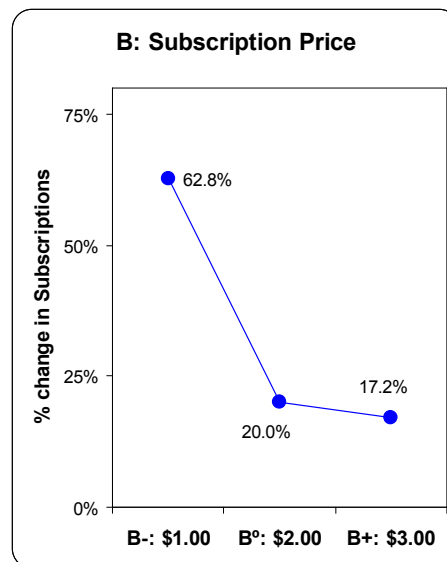
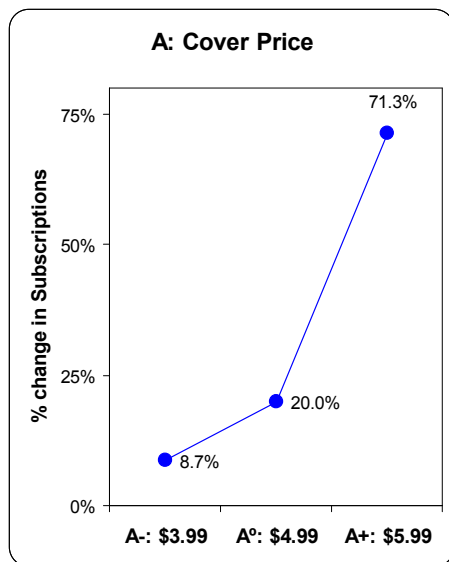
Each row represents a different combination tested in a select group of markets. For example, Recipe 1 has all three elements set at the minus level (\$3.99 cover price, \$1.00 subscription price, and draw reduced by one-third) and Recipe 8 has all three at the “+” level. Recipe 9 tests curvature in the effects, setting all three at their centerpoint. Sales and subscriptions were calculated as a percentage change from recent performance.

Recipe	Cover price			Sales	Subscriptions
	A	B	C		
1	-	-	-	-2.3%	15%
2	+	-	-	-5.5%	112%
3	-	+	-	-1.6%	1%
4	+	+	-	-3.1%	30%
5	-	-	+	18.3%	18%
6	+	-	+	1.4%	106%
7	-	+	+	22.6%	1%
8	+	+	+	-0.7%	37%
9	0	0	0	2.1%	20%

Test Results

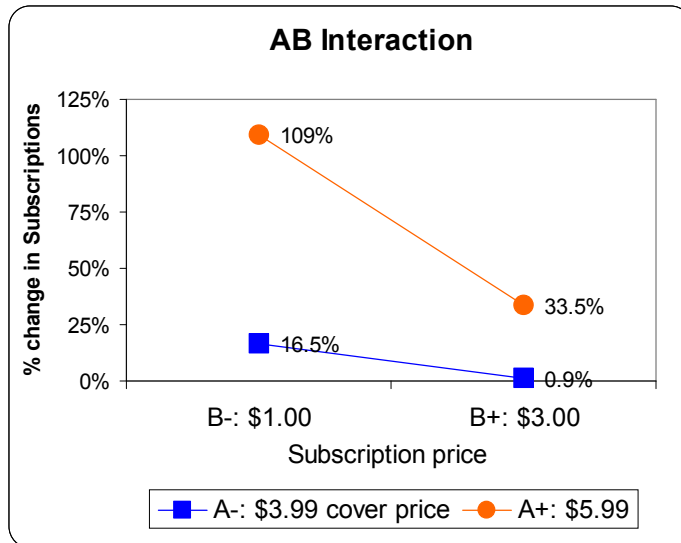
Analyzing the impact on sales (not pictured here), we saw that cover price and draw had significant main effects. The lower cover price increased single-copy sales 11.2% and more copies on the newsstand increased sales 8.3%.

Results for subscriptions are shown below. The higher cover price and lower sub price increased the number of subscriptions and draw (not shown) had no impact. These main effects did show curvature, along with a significant AB two-way interaction.



The main effects show that the higher cover price (\$5.99) increases the number of subscriptions by about 63% (71.3% - 8.7%) and the lower subscription price (\$1.00) increases subscriptions about 46% (62.8% - 17.2%). The centerpoints identify curvature in the effects. For B, a \$2 sub price shows little improvement over \$3, but a \$1 price has a dramatic impact.

The interaction adds to the complexity in showing that the cover price and subscription price must be analyzed together. The higher cover price (orange line) and low subscription price (top and bottom points at left) always increase the number of subscriptions. But the combination of both really drives the dramatic increase (in contrast, moving right-to-left on the blue line, the lower sub price has little impact when the cover price is \$3.99).



With main effects, interactions, and curvature in these two metrics, the calculation of profitability is complicated, yet far more accurate with all of these elements analyzed together. A simple test may give simple answers, but for a clear view of the marketplace, a deeper and broader investigation of price is certainly worth the effort.

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