



Pricing Tool Guide

Price Elasticity: Collecting the Data

Price elasticity is the information needed to bridge from strategy to tactics. Knowing the elasticity of a product, and what drives it, provides important information when setting prices. Strategic pricing decisions, when done well, should leave a limited range of options when it comes to tactics. Strategic tools, however, will not provide the specificity that management usually needs before approving a pricing change. This is where more in-depth analyses of how volumes change in response to price changes fills the gap. How much volumes change in response to price impacts volumes is called its price elasticity. Volumes for highly elastic products are very sensitive to changes in price; volumes for low elastic products are not responsive to price. How one models and then determines price elasticity will be the subject of another guide. This guide focuses on different ways to collect the data before modeling from it.

Where do price elastic measures come from? The table below provides a summary of the three different types of sources of price information and the varieties of sources within those types ranked from simplest and cheapest to most sophisticated and/or expensive. Each of these types of information sources have their strengths and weaknesses. The weaknesses for the most sophisticated sources include the cost and time to develop them. And even though pricing has such a large impact on profitability, a company cannot afford to make all of its price decisions with only the most sophisticated analyses. At some point, someone has to make a call.

Sources of Information for Price Elasticity

4	Expert Opinion	Controlled Test and Learn Analytics	Quantitative Survey-based (e.g. Discrete Choice)
3	Facilitated Group	Professional Analytics	Qualitative Focus Groups
2	Group Consensus	DIY Analysis of External Sales Data	
1	Individual	DIY Analysis of Internal Sales Data	Store intercepts
Type	Expertise/Judgment	Historical Data	Consumer Research

Expertise Judgment: The most important source of elasticity information, and the most commonly used throughout the pricing process, is personal experience and judgment. And at the end, of the day, unless pricing decisions are automated, it always comes down to a human making the call on what the price response will be, whether for single promotion or for a complete portfolio realignment. Even with the personal experience-based information sources, there are at least 4 levels of sophistication:



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1. **Individual:** The simplest source of information is an individual making a judgment alone based upon his/her experience.
2. **Group consensus:** This involves a group of individuals pulling together an estimate jointly through unstructured discussions.
3. **Wisdom-of-the-Crowds:** The next step in sophisticated to employ wisdom-of-the-crowds techniques, involving facilitated sessions in which individual opinions are captured separately prior to being averaged together.
4. **Expert Opinion:** Sometimes better, but usually much more expensive, is to seek external, expert advice from consultants or appraisers.

All of these approaches share the potential errors common to human judgment when making statistical analyses – survivor bias, limited data, missing variable, over-confidence, over-fitting. Nonetheless, human judgment is an important starting point at least, and is also the basis for the final decision (preferably after being informed by more objective sources of information).

Historical Sales Data: A second type of information source for price elasticity is historical sales data. Again, there are levels of sophistication within this type.

1. **DIY Internal Data Analysis:** The most basic, and most common, is to just eyeball internal sales data and try to infer a pattern visually. One of the big problems with this approach is the lack of competitive information and having the in-house talent available to model it.
2. **DIY External Data Analysis:** A slightly more sophisticated approach is to conduct DIY modeling with historical externally-supplied data, which provides the opportunity for competitive sales and other variables for analysis. The main barrier here might be getting access to this data.
3. **Professional Analytics:** Professional modeling of price, promotion and marketing mix may be able to capture price/volume interactions while controlling for other variables such as promotions, advertising, or competitive activity. The more sophisticated modeling of this kind produces simulators that can be used for scenario analyses when plotting the next price move. The main advantage of this information is that it is based upon actual behavioral data and can be subjected to rigorous modeling. The disadvantages, however, are many, such as: missing variables, insufficient variance in pricing during data periods, mismatched market definitions, lack of market context by modelers, and wrong levels of analysis. It is also more useful for mature products with long sales histories and less helpful for newer or yet-to-be introduced products.
4. **Controlled Test and Learn:** Ultimately, however, analyzing historical sales data is really just trying to discern patterns from largely uncontrolled experiments. To isolate the impact of variables more, one way to is to purposefully introduce variances in price executions for subsequent analysis. In e-Commerce, for instance, the conduct of A/B testing to provide discrete differences and measure market impact is common practice. More complex applications of test and learn practices could involve market tests with



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controlled inputs for marketing mix. The downside of this is that it is expensive, time consuming, and can tip one's hand to competitors.

Consumer Research: The third data source for price elasticity are those derived from survey research with consumers about what they would do at different levels of perception of price and value.

1. **Store Intercepts:** The most basic of these might be ad hoc store intercepts or qualitative focus groups. Both could help refine hypotheses with feedback from others, but neither is rigorous enough to make important pricing decisions.
2. **Quantitative Surveys:** More quantitative approaches include quantitative surveys that are then used to create discrete choice or other models. For new products, for which historical data is not available except through analogy, this type of research is the only external source of information available. This type of information source is vulnerable to errors in sample recruitment, design biases in favor of certain choices, and respondent honesty.

The bottom-line from this review of price elasticity sources is that there are many methods, none of which are perfect. It is best to use multiple sources of data to triangulate on the best available answer. This takes us back to the first data source – human judgment and experience. It is both a good starting point in hypothesis formation, but also the ultimate means to integrate divergent sources of information into the assumptions for demand curves that can guide pricing decisions. How to translate information into demand curves is a subject of another guide.