



# Is transparency a good thing? How online price transparency and variability can benefit firms and influence consumer decision making

Richard C. Hanna<sup>a,\*</sup>, Katherine N. Lemon<sup>b</sup>, Gerald E. Smith<sup>b</sup>

<sup>a</sup> Babson College, Malloy Hall 214, 231 Forest Street, Babson Park, MA 02457, U.S.A.

<sup>b</sup> Carroll School of Management, Boston College, 140 Commonwealth Avenue, Chestnut Hill, MA 02467, U.S.A.

## KEYWORDS

Price transparency;  
Pricing strategy;  
Price communication;  
Yield management;  
Purchase decision

**Abstract** The internet has empowered consumers and changed the way they search and shop for products and services by increasing the availability and transparency of pricing and other comparative information. However, what is less clear from a managerial perspective is just how transparent pricing information should be. While it might seem that increasing price transparency would reduce consumer search, we find that it may actually increase search and delay. In this article, we review the use of firms' application of price transparency in practice and propose that specific types of information can influence how transparent prices are to consumers, and how such transparency can influence consumer decisions in a way that is beneficial for the firm. We focus on a specific form of transparency: whether or not the consumer knows the range of pricing. We also discuss whether a high variability pricing approach versus a low variability pricing approach influences consumer decision making—and whether this influence is moderated by transparency.

© 2018 Kelley School of Business, Indiana University. Published by Elsevier Inc. All rights reserved.

## 1. Consumers are gaining price transparency. How should firms respond?

The digital and mobile economy has empowered consumers with more information about prices than

\* Corresponding author

E-mail addresses: [rhanna@babson.edu](mailto:rhanna@babson.edu) (R.C. Hanna), [kay.lemon@bc.edu](mailto:kay.lemon@bc.edu) (K.N. Lemon), [gerald.smith@bc.edu](mailto:gerald.smith@bc.edu) (G.E. Smith)

ever before. Consumers have the capability to monitor prices of preferred services and goods, track prices historically, or receive alerts for historically low or high prices—in effect enabling them to create price transparency. *Price transparency* is the extent to which information about prices is available to buyers that organizes, explains, clarifies, or projects the contextual direction and/or rationale for the seller's pricing. For example, Amazon notifies returning customers that the price of [Product X] has increased [or decreased] from [Price 1] to [Price 2] since you placed it in your Shopping Cart. eBay gives customers constant updates on price, price trends, quantity sold, and number of customers watching the product.

Price transparency is more important today because the information asymmetry underlying traditional seller price setting is being disrupted in many purchase situations—buyers can know almost as much as sellers about market prices (Miao & Mattila, 2007; Rossi & Chintagunta, 2016; Zhang & Jiang, 2014). With a simple internet search, customers considering a product like deck furniture from a local retailer can know the competitive prices of the same products at retailers not only nearby but also in distant cities throughout the region, country, or the world. Of course, customers may contribute to price transparency by sharing information on their own by posting pricing information or haggling opportunities on third-party sites such as TripAdvisor (Zhang & Jiang, 2014) or TRUECar. Speaking of the empowered customer, digital branding author Gerald Smith (2016, p. 2) said:

Mobile platforms such as Apple iOS, Android, Blackberry, or Microsoft Windows facilitate access to the vast information trove of online information regardless of geographic location—on-site at retail comparing this retailer's prices with other competing retailers, or using GPS to suggest nearby shopping alternatives. Because of their mobile agility, your customers have the power to substitute immediate and proximal product and service alternatives, dramatically leveraging their ability to negotiate prices and product/service preferences.

By definition, price transparency is fundamentally about buyers having information about sellers' prices available from the marketplace for a specific good or service (Granados, Gupta, & Kauffman, 2008). Price transparency enables buyers to predict and judge the relative appeal of the firm's present offer (i.e., what the customer gets in return for the price paid) compared to other competitive offers in the marketplace. Firms typically manage price transparency selectively to persuade buyers of

the relative appeal of their offers in one of two ways: (1) They can use price communication to highlight changes or differences in price or (2) they can use pricing strategy to consistently manage the variability of the firm's prices. Transparency achieved via price communication may come in several forms, including selective price information posted by firms (Rossi & Chintagunta, 2016), consumers sharing price information (Zhang & Jiang, 2014), or third parties providing predictive models of price trend information (Granados et al., 2008). However, firms can also be more or less transparent by managing the price variability they strategically deploy in the market. For example, some firms choose a high variability pricing strategy seen in high/low retail pricing strategies, or yield management pricing in industries such as air travel, car rental, and hotels, or with surge pricing in ride-sharing services such as Uber or Lyft. These firms usually maintain high prices, punctuated by selectively offering low prices as short-term purchase incentives. Other firms choose a low variability pricing strategy seen in Everyday-Low-Pricing (EDLP) exemplified in discount retailers like Walmart or Amazon or airlines such as Southwest or Ryanair. A typical assumption of pricing economics is that sellers possess an asymmetric price information advantage and that consumers cannot see behind the curtain of seller pricing models. But in the digital economy, buyers can now reasonably predict seller-pricing patterns to exploit best prices, raising important questions for firms and managers about how to strategically manage price transparency to continue to influence consumer decisions.

Managers face several questions. How transparent is your pricing in the marketplace, whether enabled by you or by third-party players? How effective is it in consistently persuading buyers to purchase? What options are available to manage your firm's price transparency in the marketplace? The challenge for managers today is to determine how to balance price transparency by using price communication, by strategically managing price variability, or both. Southwest Airlines' Transparency ad campaign is a good example of the effective use of price transparency through price communication, coupled with the airline's legendary low variability pricing strategy. By alerting consumers that the information they need about Southwest fares is transparent and easily knowable, it can influence consumers to accelerate the purchase decision and to search no further because of Southwest's price assurances. Likewise, Amazon's EDLP strategy uses competitive pricing algorithms that scour the internet to ensure that its prices on target products are usually the lowest—persuading

Is transparency a good thing? How online price transparency and variability can benefit firms and influence

customers to likewise accelerate their purchase decision and shortcut the search process, making Amazon their first and last place to search prior to purchase.

In this article, we provide a framework for considering the impact of price transparency strategies on consumer decision making, together with examples of firms that use these strategies in online service and retail environments to influence purchase acceleration, purchase delay, and price paid. We report findings from our research on airline price transparency, which generally suggests that communicating information about prices to consumers, specifically the recent historical range of the firm's prices (price communication transparency) together with strategically managing a narrow price range (low variability pricing strategies) leads consumers to accelerate purchase, and at higher prices. We show that the favorable impact of these price transparency strategies on overall cash flows can be significant. Our price transparency framework has broad implications for most firms, especially if they have variability in price over time, or are considering utilizing yield management strategies. Regardless of pricing strategy, most firms benefit from purchase acceleration (due to operational issues) or would benefit from consumers' higher willingness to pay.

## 2. Price transparency in practice

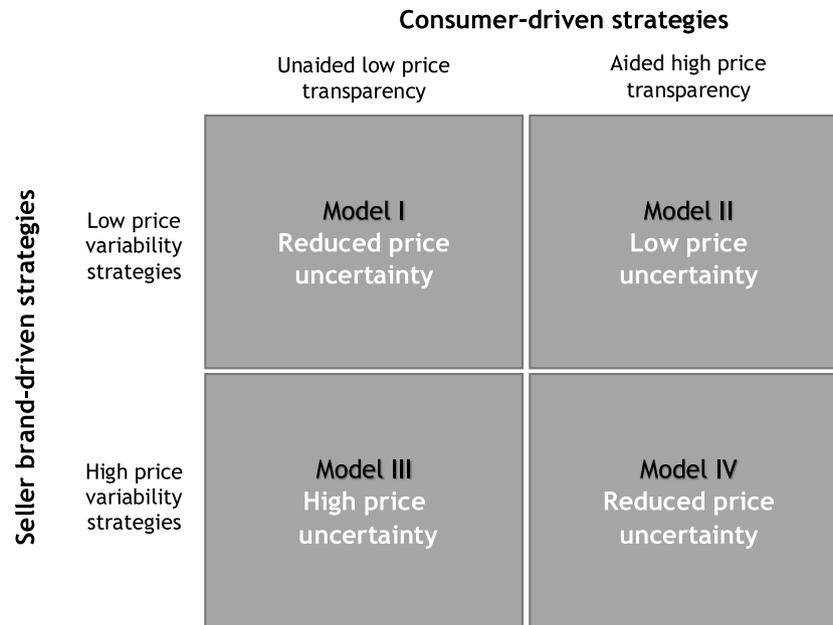
Consumers often strategically adjust the timing of purchase decisions, delaying or accelerating purchase depending on their uncertainty, especially around price (Cox, 1967; Greenleaf & Lehmann, 1995; Urbany, Dickson, & Wilkie, 1989). When consumers are unaware of the fair market price for a product or service of interest, they will search for information until they have established some knowledge, such as the degree of price variability in the marketplace and the various alternative prices that are available (Stigler, 1961). As consumers seek to reduce price uncertainty, others (e.g., agents, sellers, and third-party price information providers) can aid them. In contrast, sellers manage price uncertainty strategically and selectively to maximize profit contribution by learning what consumers are willing to pay and their likelihood of purchase. For consumers, extensive searching to discover prices and reduce price uncertainty does not come without a cost with respect to time and money. The discovery process is constrained by the physical and cognitive cost of search (e.g., the cost involved in traveling to a mall or market to search among various seller stores and then searching

among seller offerings and prices within the store and then comparing prices and offerings within and across stores—a cognitively demanding task). The digital economy provides various tools that increase price transparency to consumers and reduce the cost of search (Alba et al., 1999; Lynch & Ariely, 2000). In this article, we examine the extent to which price transparency and price variation may affect how consumers respond to information about prices. This has direct effects on a firm's profitability and significant implications for firms' pricing strategies.

We propose a framework for the impact of price transparency on decision making using two dimensions to help managers determine the options available to strategically manage price uncertainty and price transparency (see Figure 1). The first dimension, *consumer-driven strategies*, refers to ways consumers can discover price transparency in the marketplace by either relying primarily on their own category knowledge and innate physical and cognitive abilities to discover, process, and compare prices resulting usually in low price transparency—what we call *unaided (low) price transparency*. Or, they can rely on the assistance of others (i.e., such as buyer agents, third-party information providers, or even sellers) to achieve high price transparency—what we call *aided (high) price transparency*. Some consumers seek assistance from real estate agents, insurance agents, or travel agents because the cost and effort involved in discovering sellers' prices and reducing price uncertainty is high. In the digital economy, there are many digital tools—apps, websites, and services—to help consumers organize historical price trend data, show current comparative prices, or apply predictive modeling to project potential price changes into the future.

The second dimension, *seller brand-driven strategies*, refers to ways in which sellers such as manufacturers and brands can strategically and selectively manage price variability by the pricing strategies they choose. Firms do this in two ways: (1) by broadly, or selectively, revealing or advertising their prices—as discussed above under consumer-driven strategies; and (2) by reducing, or increasing, the variability of their prices. Nobel laureate George Stigler (1961, pp. 223–224) said: “This is presumably one reason. . . why uniform prices are set by sellers of nationally advertised brands. [If] they have eliminated price variation, they have reduced the cost of the commodity (including search) to the buyer.” When firms reduce the variability of their prices, they pursue what we call *low price variability strategies*. These can be seen in the EDLP strategies of retailers such as Walmart, Costco, or Amazon, or

Figure 1. Alternative pricing strategy models for managing price uncertainty



airlines such as Southwest or Ryanair. These brands also often choose to communicate their low variability pricing strategy to consumers (as noted above) so that consumers can save search time and effort, simplify the price discovery process, and thereby potentially accelerate purchase. Alternatively, when seller brands invest in increasing the variability of their prices, they invest in what we call *high price variability strategies*. These strategies consistently feature a broad range of prices, usually operationalized in high/low pricing with various forms of promotional discounts, rebates, bonus packs, or temporary markdowns designed to accelerate purchase now. Firms employing such strategies often choose to selectively reveal or advertise their prices; they make it difficult to predict when or if such temporary price reductions may be available in the future.

High price variability strategies empirically have been found to be more profitable; prior research found that 74% of American supermarket retailers are using high/low pricing strategies, compared to 26% using EDLP strategies (Hoch, Dreze, & Purk, 1994). However, this research appeared in 1994, before the proliferation of consumer digital search tools and services. One recent survey suggests that this trend is even increasing, with only 10% of retailers using some form of EDLP strategy (Guinn, 2015). Dynamic pricing based on yield management pricing methods and data analytics is a high price variability strategy that is gaining prominence in the internet economy, as we discuss below.

The combination of consumer-driven strategies, designed to reduce price uncertainty, and seller brand-driven strategies, designed to strategically

manage price uncertainty, leads to four different pricing strategy models that managers may follow to manage price transparency (see Figure 1).

### 2.1. Model I (upper left), unaided (low) transparency/low price-variability strategies

In this quadrant, consumers rely mainly on their own innate consumer price search capabilities depending on their level of knowledge, search skills, and education about the product category. Rather than searching extensively across many seller brands and prices, they opt instead to search among highly visible price-oriented seller brands that offer consistently low variability pricing. Seller brands enable the task of price discovery by reducing price variability (i.e., they choose low price variability strategies) and by broadly revealing their prices. This quadrant combination results in reduced price uncertainty. Home Depot or Lowes in do-it-yourself retailing offer consistently low prices on a broad assortment of home accessories. Apple revolutionized the world of music retailing by reframing the price of individual sound tracks at a fixed price of 99¢ each on its iTunes music service and has since become the world's largest music retailer. Spotify revolutionized music yet again by reframing music prices with streaming access to an unlimited music library free with advertising, or a monthly subscription price of \$9.99 without. Netflix did the same with movies and video productions. Indeed, many software-as-a-service (SaaS) pricing strategies are anchored in this idea of consistent, low variability

Is transparency a good thing? How online price transparency and variability can benefit firms and influence

pricing strategies by seller brands and are seen in diverse industries such as sales force management (Salesforce), meeting management (Citrix GoTo-Meeting), desktop software (Microsoft Office 365), or signature and transaction management (DocuSign).

## 2.2. Model II (upper right), aided (high) transparency/low price variability strategies

In this quadrant, seller brands enable price discovery by reducing price variability; once again, they choose low price variability strategies. However, many of these seller brands also invest specifically in assets and capabilities that enable price discovery and thus price transparency for consumers. Consequently, consumers are aided in price discovery by leveraging the price transparency capabilities of seller brands, including using digital tools with assistive historical and/or predictive price search capabilities, and/or using agents that have extensive knowledge of a product category, and can ably track and predict price trends. Consumers operating in this quadrant combination achieve low price uncertainty. Many e-commerce sites are classic examples of aided transparency/low-price variability strategies. Amazon has one of the most acclaimed product evaluation and price comparison engines across wide categories of products and services with a brand promise that customers can always expect the lowest everyday prices on the Amazon website. Jet.com from Walmart has become an archrival to Amazon with a similar strategy. United Health Care provides a member portal where you can select your health need and different care options (e.g., hospital, online visit, urgent care, ER), along with the average price charged for each type: emergency room at \$1,700 per visit, urgent care center at \$190 per visit, virtual online visit with a doctor at \$40 per visit, and so on. Among airline firms, Southwest provides the greatest price transparency on its reservation website with a Low Fare Calendar, showing a full month of lowest fares available for each day of the month. Such transparency signals to buyers that they need not search further since lowest prices are clearly visible and available—Southwest's positioning and communications as an EDLP brand provide continuing marketing support.

## 2.3. Model III (lower left), unaided (low) transparency/high price-variability strategies

In this quadrant, seller brands choose to selectively, strategically reveal price information to consumers,

and choose high price variability strategies; they do little to reduce the effort involved in price discovery, leaving the task entirely to consumers. Consumers rely mainly on their own innate consumer price search capabilities depending on their level of knowledge and education about the product category. They search for prices to learn when prices are low and attractive. This quadrant combination results in high price uncertainty. For example, traditional high/low pricing in retail with brands such as Macy's, Nordstrom, Gap, Neiman-Marcus, Bloomingdale's, and Lord & Taylor all rely on frequent or occasional price discounting to attract customers and keep them guessing as to when prices will be low and how long a discount will last. Yield management pricing and dynamic pricing are used in cruise lines, car rentals, amusement parks, and concert performances and enable seller brands to maximize the price paid based on changes in consumer demand. Uber's surge pricing is a good example of this, automatically charging higher prices during peak demand periods. *The Lion King* by Disney Theatrical Productions became the top-grossing show on Broadway using digital algorithms that suggested the highest ticket prices that theater-goers would likely pay for each seat at every performance in the theater. As Barry Berman (2005, p. 170) noted:

Hotels use yield management pricing to determine the number of rooms available at select price levels. In order to maximize revenues, the hotel must decide how many rooms it needs to sell at discounted rates to maximize total occupancy while making sure to have enough rooms left over for late-booking travelers, who are more likely to pay full rack rates.

Even semiconductor manufacturers use yield management pricing to predict what prices to charge different customers depending on demand projections at the time of order, capacity utilization, and forecast inventory availability.

## 2.4. Model IV (lower right), aided (high) transparency/high price-variability strategies

In this quadrant, seller brands choose high price variability strategies and do little to reduce the task of price discovery, leaving the task essentially to consumers. Consumers therefore deliberately seek and receive assistance in price discovery from other third-party sources, either from digital tools with assistive historical and/or predictive price search capabilities or from agents that have extensive knowledge of a product category and can ably track

and predict price trends. This quadrant combination results in reduced price uncertainty. As in Model III, this quadrant is dominated by high/low pricing strategies by seller brands that do little to assist consumers with price search and discovery. In healthcare, MDsave and Healthcare Bluebook compare local prices for certain common healthcare procedures. GoodRx helps consumers save money and print coupons for prescription drugs. ReferalMD is an online tool offering information on referring doctors, the procedures they perform, and how much they charge. In air travel, Hopper, a third-party app-based service, users receive greater price transparency via regular tracking notifications of airline fare changes on chosen routes. Other fare finders provide similar digital forms of price transparency, tracking, and fare change alerts, including Kayak, Fare-Finder, Cheapflights, Skyscanner, and Airfarewatchdog, as well as established travel sites such as Travelocity and Expedia. In retailing, Everlane's slogan is: Know your factories. Know your costs. Always ask why. It shows customers the traditional prices for luxury clothing items and reveals factory locations, the product's markups, margins and where the money goes, which items are on sale, and multiple options for how to pay. In nondigital settings, home buyers often hire buyer agents with specific knowledge of local real estate price trends, including recent and pending deals, and listings and prices that are new to the market. Consumers often use insurance agents to track and simplify insurance offers with complex prices involving coverages, out-of-pocket deductibles, and waivers; they also use travel agents with tacit knowledge of airline prices, destination hotel, and ground transportation prices that are difficult to track and understand without expert knowledge.

### 2.5. Figure summary

In summary, as shown in [Figure 1](#), consumers may achieve low uncertainty by seeking brands and products with low variability pricing strategies and for which there is high (aided) price transparency with price assistance tools (upper right quadrant). Alternatively, they may settle for high uncertainty by selecting from among brands and products with high variability pricing strategies and for which there is low (unaided) price transparency without price assistance tools (lower left). Alternatively, they may seek to reduce uncertainty by either seeking brands and products with low variability pricing strategies with low (unaided) price transparency (upper left) or use high (aided) price transparency assistance tools and services to search among brands and products with high variability pricing strategies (lower right).

In both of these latter two cases, consumers achieve reduced uncertainty.

### 3. Consumer response to price uncertainty

The models cited above suggest the types of tools and strategies that consumers may use to manage price uncertainty. But underlying these strategies is a more fundamental question: How do consumers actually respond to pricing information when prices are highly variable, such as in dynamic pricing strategies, especially with complex buying situations? Prior research suggests that while high/low pricing strategies may be attractive to managers because they can segment the market and manage demand, they are often confusing to consumers ([Cary, 2004](#); [Wirtz & Kimes, 2007](#)).

With airline pricing, for example, the consumer decision of when to purchase a ticket can make a significant difference in price paid; consumers who buy strategically can save 70% or more compared to other passengers on the same flight with similar seats. A midyear check using the airline price tracking app, Hopper, found that fares on the popular New York City JFK to Orlando, Florida route range from \$180–\$550 with the lowest fares on Mondays and usually Tuesdays in October, and the highest fares on the Sunday before Thanksgiving in the U.S. Greater price uncertainty often leads consumers to delay decision making while they search for price-acceptable alternatives and reduce the risk of a regretful choice ([Greenleaf & Lehmann, 1995](#)). Thus, high price variability encourages consumers to search longer and/or rely on some form of transparency to help reduce the uncertainty of the decision. Such delays can have an adverse effect on both operations and cash flow for industries with perishable inventory (e.g., airlines). This suggests that a high transparency, low price variability strategy that would reduce such purchase delays (by consumers purchasing earlier) might actually be better for firms than a high/low pricing strategy.

To illustrate this point, we used data from a purchase simulation experiment ([Hanna, Smith, & Lemon, 2015](#)) looking at the purchase of an airline ticket from a third-party online travel agent (OTA) to show the impact of price transparency and price variability on cash flow (see [Table 1](#)). Overall, our analysis shows that (aided) high transparency with low price variability reduced purchase delay.

- *Purchase Acceleration.* Specifically, when price variability was low, 88.2% participants in the (aided) high transparency condition purchased

Is transparency a good thing? How online price transparency and variability can benefit firms and influence

**Table 1. Study design background**

Hanna et al. (2012) simulated a purchase experience for an airline ticket by presenting consumers with a scenario involving buying a plane ticket for a cross-country flight. The participants are told they need to fly and have a 14-day window to find a ticket at a price they are willing to pay.

In the experiment, the participant is presented with the best price of the day and asked if they want to purchase at that price or wait to see how prices change the next day. If they select wait, they were then told to imagine 24 hours had passed and they were then presented with a new best price of the day. This process would repeat until the participant either opted to purchase or reached the 14<sup>th</sup> day at which they had to purchase the ticket at the available price to make the trip.

The study captured which day (out of 14) the participant delayed until and the price they paid that day. In this experiment, the authors manipulated whether a person was presented prices that had low or high variability across the 14 daily presentations. They also manipulated whether participants were told about the variability (high transparency) or not (low transparency).

in the first 3 days in the simulation whereas only 29.2% of the (unaided) low transparency participants purchased in the first 3 days. However, when price variability was high, there was very little difference in purchase delay due to transparency. In the first 3 days, 65.4% in the low transparency condition and 70% in the high transparency condition purchased tickets.

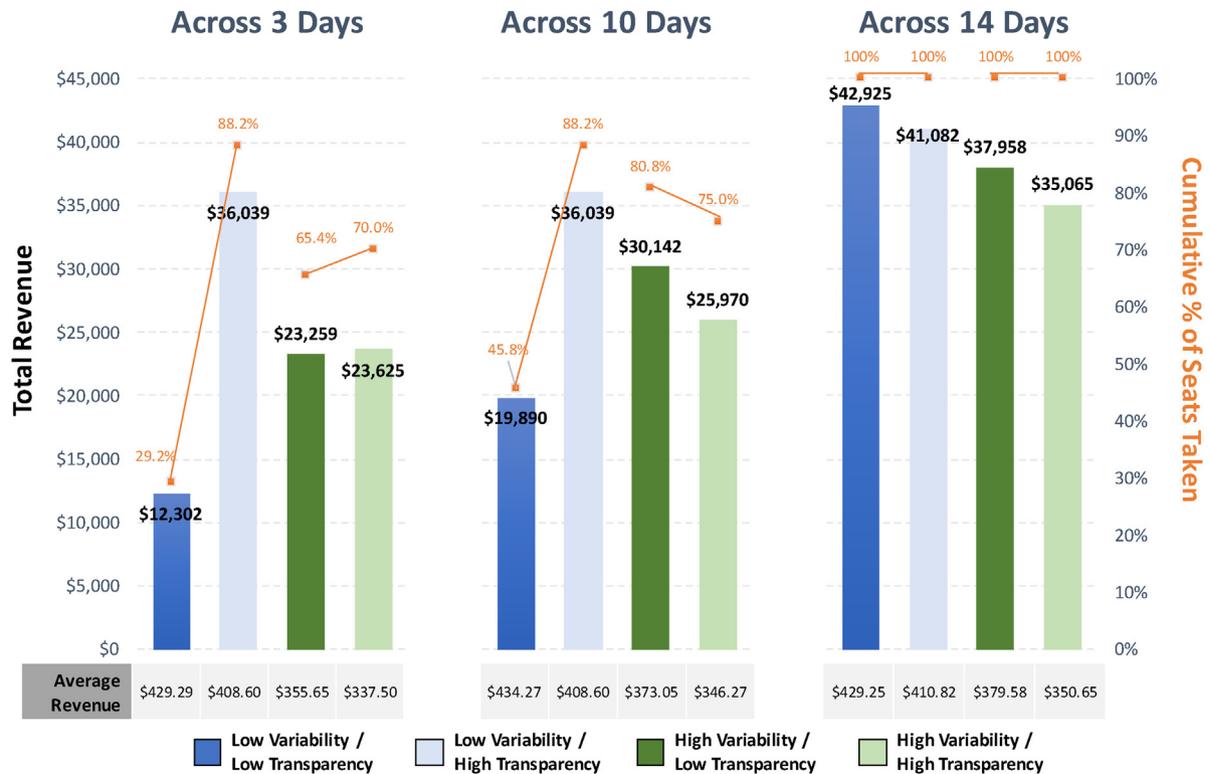
- **Price Paid.** Low price variability also resulted in higher average prices paid in the first 3 days: \$408.60 (high transparency) and \$429.29 (low transparency). However, when price variability was high, the average price paid in the first 3 days was much lower: \$355.65 for the low transparency condition and \$337.50 for the high transparency condition. This pattern persisted after 10 days as well (see [Figure 2](#)) until the end of the experiment wherein remaining participants had to accept the final price offered in order to make their trip.

To consider what these results mean with respect to cash flow, let us assume we have four airlines, each with a plane that has 100 seats to fill. Similar to our [Figure 1](#), each of these four airlines applies either (1) unaided (low) transparency, low-variability, strategy, (2) aided (high) transparency, low-variability strategy, (3) unaided (low) transparency, high-variability strategy, or (4) aided (high) transparency, high-variability strategy. For each airline, if we multiply the page of respondents who purchased at 3 days and at 10 days at its respective average price, we would have a rough estimate of the revenue for each airline during that time period. Thus, for the low transparency and low variability airline, we would assume 29.2% of the 100 seats are sold for an average price of \$429.29 in the first 3 days for a total revenue \$12,302. If we apply this same logic to the other three airlines, revenues after 3 days would be highest for the high transpar-

ency and low variability airline at \$36,039, and much lower for the other two airlines: \$23,259 (low transparency, high variability), and \$23,625 (high transparency, high variability; see [Figure 2](#)). If we extend to the 10-day period, the same pattern emerges until finally on the 14th day we assume that all 100 seats are sold based on the structure of the experiment. We can see that the airline using the aided (high) transparency, low variability strategy has the highest cash flow through the first 10 days. In fact, the airline in the (aided) high transparency, low variability condition achieves this level of cash flow after only 3 days. Indeed, it is three times as high as the unaided (low) transparency, low variability airline, and at least \$13,000 more than the two high variability airlines. Overall, the high variability airlines suffer from lower prices and cash flow due to the variation in price and people waiting out the purchase until what they deem is the best price available.

This data suggests that following a low variability with aided (high) transparency strategy is likely to improve cash flow. In the industry, according to a recent study by Oliver Wyman ([Stalnaker, Usman, & Taylor, 2016](#)), we see that two of the top three airlines in the industry, JetBlue and Southwest Airlines, are considered value carriers applying a low price variability strategy with high transparency regarding their prices. Because of a healthy cash flow, airlines such as Southwest can negotiate and purchase gas in advance when prices are low and thereby be more profitable when setting value prices. If price transparency can lead to shorter delays in purchase decisions, there is the potential for firms to enjoy a more predictable cash flow that will allow them to operate more fluidly. The other carrier in the top three, Alaska Airlines, has a competitive advantage of cost structure like JetBlue and Southwest and analysts are seeing Alaska move more toward a low price carrier model ([Cederholm, 2015](#)).

Figure 2. Estimated total revenue and cumulative seats taken by consumers in our study



From a consumer perspective, overall, this research contributes to our understanding of consumer decision making, suggesting that transparency and price variability influence purchase delay and purchase prices. Specifically, when there is low price variability and people know it (aided-high transparency with low price variability), they are willing to buy sooner and hence pay a higher average price. Whereas when variability is higher and they know it (aided-high transparency with high price variability), they delay their purchase waiting for a better price to become available, and hence on average pay a lower price. However, when consumers who have no idea of future prices (unaided-low transparency) regardless of price variability, they usually delay significantly longer to make a purchase compared to those who know the future prices.

The delay often leads to paying a lower price on average. [Hanna et al. \(2015\)](#) found that consumers who experience high price variability paid, on average, significantly less for their ticket than those who experience low price variability. This is not entirely surprising given that high price variability means a greater range of lower prices available than when there are low price variability offerings. Similarly, participants who knew the price variability

(aided-high transparency) also paid significantly less on average than those who did not (unaided-low transparency).

We have presented results focused on online purchases in a single industry. As we note below, price variability and price transparency strategies can be used by almost any industry online and offline. Future research could extend these findings to other contexts and industries. In addition, it is important to understand what other key variables may influence these relationships. For example, it would be interesting to examine whether the effect of transparency is stronger or weaker depending on the strength of a brand, or depending on customer loyalty. Future research could attempt to identify potential long-term consequences of price transparency and price variability strategies.

#### 4. Managerial insights: What should firms do?

The research described in this article offers information for firms regarding pricing and revenue management strategy. Adding a consumer perspective component to the traditional firm perspective, we offer several specific managerial insights.

Is transparency a good thing? How online price transparency and variability can benefit firms and influence

#### 4.1. The beneficial effects of price transparency and stability

We suggest that price transparency is effective at influencing consumer behavior, especially when combined with low variability pricing strategies. Consumers are not only willing to pay more when pricing is clear and transparent but also likely to accelerate their purchase. We also suggest that consumers will feel less regret with the price they paid (see [Hanna et al., 2015](#)). Perceived pricing stability and predictability—facilitated by transparency and low variability strategies—appear to engender price confidence and trust and thus become a foundation upon which to build broader customer relationships. We see this with firms relentlessly pursuing EDLP pricing strategies such as Amazon—initially consistently selling books at a 30% to 40% discount and later expanding the same EDLP strategy into a vast array of product categories. Southwest and Ryanair offer low-cost point-to-point air travel. Simplified EDLP pricing strategies have become foundational for successful digital startups such as Warby Parker in eyeglasses, Dollar Shave Club in razors, and Spotify in music streaming, among others.

Pricing practitioners and researchers have long held, and empirical research from the 1990s confirms ([Hoch et al., 1994](#)), that firms can be more profitable by setting many different prices for many market segments; this is called segmentation pricing and is found in routinized high/low promotional discount strategies (see [Nagle & Müller, 2018](#)). Dynamic pricing and yield management modeling have enhanced the power and capability of segmentation pricing dramatically, enabling pricing at the individual buyer level. However, the upshot of this sophistication is greater price variability (airline prices change daily or hourly even on the same route), price complexity, and greater cost of search for consumers. This leads to purchase delays and firm vulnerability while consumers search for acceptable prices.

#### 4.2. New transparency tools and technologies may be beneficial

We also suggest that new online tools that provide transparency to the consumer may show how firms can work with consumers to help them achieve the price transparency they seek in ways that dovetail with each firm's interests. Consumers are drawn to digital tools, many of which are third-party apps that track prices across many sellers and encourage interbrand comparison on price rather than intra-brand comparison on quality and value. Firms would

be wise to expand the development of their own brand-centered transparency tools and strategies. A decade ago, few airlines made meaningful lowest price transparency available but today, most usually offer visibility of a few days of lowest prices. Southwest offers a full month's view of lowest prices and greater transparency. [Kayak \(2018\)](#) takes such visibility even further, illustrating the power of price transparency:

KAYAK Price Alerts will help you track prices well ahead of your trip so you can book when the booking's good. Our Price Forecast tool in flight search can also help you figure out if you should wait or book now. We'll analyze price trends to tell you what we think will happen with airfare in the next several days. Also, we've even created an Anywhere feature for our annual Travel Hacker Guide. There, you can plug in your home airport and destination and we'll let you know what prices tend to do, how far in advance you should plan to book and what is considered a good deal on airfare.

#### 4.3. Downside of low prices seen by consumers

We suggest another downside for traditional high/low revenue management strategies. Firms using revenue management are often effective in reducing excess capacity and smoothing demand because they offer significantly reduced prices to increase utilization. However, our results are consistent with well-known findings on reference price formation, which suggests that when consumers see such a low price (they do not even have to purchase at that low price), merely seeing the low price influences lower reference prices that influence the price they pay on their next purchase. Our results suggest that firms should be careful about utilizing these ultra-low prices in the context of dynamic pricing as the 'lowest price seen' reference effects appear to last from one purchase to the next.

#### 4.4. What can firms do?

What can firms do? An audit of the firm's price transparency is a good first step. Consider these types of questions: What is the complexity of pricing menus that customers encounter—simple and intuitive like Southwest airlines or Warby Parker eyeglasses, or complex and obscure like telecom firms Verizon or Comcast or traditional airlines Delta, American, or United with hidden fees? What is the perceived variability of your pricing from the customer's perspective? What do customers say in

social media about your pricing? Find a competitor that does price transparency well and use it as a benchmark to diagnose your own price transparency. In addition, consider measuring customers' regret with the price they pay as this can lead to a better understanding of behavior and be a proxy for their intent to repeat purchase (Bell, 1982).

Finally, for firms with established segmentation high/low pricing strategies in place, consider the possibility of adding an alternative, simpler pricing strategy such as subscription or EDLP pricing as a flanking brand or digital e-commerce offering. Gillette introduced its Gillette On Demand online service for razors with subscription pricing, free shipping, and text or email reordering to counter market share losses to online competitors. Also consider communicating your simplified pricing strategy, similar to Southwest's Transparency campaign with the slogan: Low fares. Nothing to hide. Such strategies appeal to more price- and value-focused buyers, while segmentation high/low pricing remains effective for more quality-focused, traditionally loyal buyers.

## References

- Alba, J., Lynch, J., Weitz, B., Janiszewski, C., Lutz, R., Sawyer, A., et al. (1999). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing*, 61(3), 38–53.
- Bell, D. E. (1982). Regret in decision making under uncertainty. *Operations Research*, 30(5), 961–981.
- Berman, B. (2005). Applying yield management pricing to your service business. *Business Horizons*, 48(2), 169–179.
- Cary, D. (2004). The future of revenue management: A view from the inside. *Journal of Revenue and Pricing Management*, 3(2), 200–203.
- Cederholm, T. (2015, January 16). Alaska Air Group fundamentally strong, cheap. *Market Realist*. Available at <https://marketrealist.com/2015/01/alaska-air-group-fundamentally-strong-cheap>
- Cox, D. F. (Ed.). (1967). *Risk taking and information handling in consumer behavior*. Boston, MA: Harvard University.
- Granados, N. F., Gupta, A., & Kauffman, R. J. (2008). Designing online selling mechanisms: Transparency levels and prices. *Decision Support Systems*, 45(4), 729–745.
- Greenleaf, E. A., & Lehmann, D. R. (1995). Reasons for substantial delay in consumer decision-making. *Journal of Consumer Research*, 22(2), 186–199.
- Guinn, J. (2015). The top retail pricing strategy for your business. In *Software Advice* Available at <https://www.softwareadvice.com/resources/retail-pricing-strategies/>
- Hanna, R. C., Smith, G., & Lemon, K. (2015). What's that plane ticket worth? Responding to dynamic pricing strategies. In L. Robinson (Ed.), *Marketing dynamism and sustainability: Things change, things stay the same*. Cham, Switzerland: Springer.
- Hoch, S. J., Dreze, X., & Purk, M. E. (1994). EDLP, hi-lo, and margin arithmetic. *Journal of Marketing*, 58(4), 16–27.
- Kayak. (2018, March 20). How to be a Kayak confident traveler. Available at <https://www.kayak.com/news/kayak-confident-traveler/>
- Lynch, J. G., & Ariely, D. (2000). Wine online: Search costs affect competition on price, quality, and distribution. *Marketing Science*, 19(1), 83–103.
- Miao, L., & Mattila, A. S. (2007). How and how much to reveal? The effects of price transparency on consumers' price perceptions. *Journal of Hospitality and Tourism Research*, 31(4), 530–545.
- Nagle, T. T., & Müller, G. (2018). *The strategy and tactics of pricing: A guide to growing more profitably* (6th ed.). New York, NY: Routledge.
- Rossi, F., & Chintagunta, P. K. (2016). Price transparency and retail prices: Evidence from fuel price signs in the Italian highway system. *Journal of Marketing Research*, 53(3), 407–423.
- Smith, G. E. (2016). *The opt-out effect: Marketing strategies that empower consumers and win customer-driven brand loyalty*. Hoboken, NJ: Pearson Education.
- Stalnaker, T., Usman, K., & Taylor, A. (2016). *Airline economic analysis: For the Raymond James Global Airline Book*. New York, NY: Oliver Wyman.
- Stigler, G. J. (1961). The economics of information. *The Journal of Political Economy*, 69(3), 213–225.
- Urbany, J. E., Dickson, P. R., & Wilkie, W. L. (1989). Buyer uncertainty and information search. *Journal of Consumer Research*, 16(2), 208–215.
- Wirtz, J., & Kimes, S. E. (2007). The moderating role of familiarity in fairness perceptions of revenue management pricing. *Journal of Service Research*, 9(3), 229–240.
- Zhang, X., & Jiang, J. (2014). Increasing price transparency: Implications of consumer price posting for consumers' haggling behavior and a seller's pricing strategies. *Journal of Interactive Marketing*, 28(1), 68–85.