

# Ignite Your Bliss: A Case Study on Cost Curves Analysis

Karla Borja, University of Tampa, USA  
Melissa Irvine, University of Tampa, USA  
Troy Land, University of Tampa, USA  
Robert Wilson, University of Tampa, USA

## ABSTRACT

*Cost curves analysis is a challenging economics subject to teach. It requires the presentation of extensive cost tables, cost equations, and a set of cost curves, which students tend to find highly theoretical. In addition, the literature on real-world applications of cost curves analyses is limited, mainly because firms release their cost structures at current output levels rather than at potential output levels. Thus, there are few available pedagogical tools for economics instructors to use when facing the difficult task of linking the theory to the firm's real-world cost analyses. This paper contributes to economics pedagogy by briefly proposing a case study on a yoga retreat business that serves as a valuable example of a cost curves analysis.*

**Keywords:** Case Study; Cost Curves Analysis; Economics

## INTRODUCTION

All standard introductory economics texts offer some level of cost curves analysis. Chapters on economic cost analysis assist in an understanding of market power and pricing strategy through which firms optimize profits by attaining a level of output that makes the marginal costs equal the marginal revenues. The typical introduction to cost analysis includes a presentation of extensive cost tables, cost equations, and cost curves. The student must be able to calculate or graph the total, marginal, and average cost curves and evaluate them against revenue values in order to predict firm behavior. For these theoretical exercises, the market must provide enough firm-level information about total costs at different production stages. In practice, however, most firms provide data only on the current production level.

Real-world cost curves are elusive and much more complex than the smooth cost curves illustrated in microeconomics textbooks. Students might fail to grasp the applicability of these graphs and calculations, and economics instructors find it difficult to stimulate interest in this topic. This article attempts to narrow the gap between the theory and real-world application of cost analysis in economics courses by presenting a brief case study that could serve as a relevant in-class exercise to foster critical skills and illustrate the applicability of the cost curves analysis.

## THE SITUATION

Melissa Roberts has been toiling away under the phosphorescent lights of the cubicle for far too long and wishes to leave her current position as a webpage developer in the financial services industry to pursue her true passions - yoga and travel. Melissa would like to start a yoga retreat business, "Ignite Your Bliss", in which clients embark on weeklong excursions to practice yoga and meditation as well as to pursue other interests, such as photography, cooking, painting, and kayaking. In order to start this new business, Melissa will need to leave her current position, in which she earns a salary of \$52,000, and devote herself full-time to the new venture.

## **THE YOGA RETREAT INDUSTRY**

The yoga industry is experiencing significant growth. The 2002 National Health Interview Survey (NHIS), featured in the *Supplement of Alternative Medicine*, reported that approximately 5.1% of Americans, or ten million adults, practiced yoga in 2002 (Birdee et al., 2008). In 2006, it was estimated that about three million adults practiced yoga at least twice a week (Moran, 2006). In addition, spending on yoga classes and yoga-related products and services doubled between 2004 and 2008, from \$2.9 billion to \$5.7 billion (Higgins, 2010).

Yoga retreats are held throughout the world, featuring diverse locations and amenities, from an all-inclusive luxury retreat at a sprawling estate in France to no-frills accommodations in Kerala, India. These retreats vary in length from overnight stays to weeklong getaways. The typical yoga traveler will find an option among many that fits his/her time and budget constraints, offering accommodations and a locale suitable to his/her preferences. Yoga and travel have been grafted onto the mainstream; many chain hotels and bed-and-breakfasts look for ways to incorporate yoga into their programs to capture incremental revenue from each reservation. Yoga is provided as an amenity rather than as the sole focus of the hotel's services, but these programs compete with yoga retreats by attracting more casual practitioners (Higgins, 2010).

Typical U.S. yoga practitioners are females between 18 and 53 years of age. They are likely to be career-oriented and college-educated, with many disclosing annual earnings over \$50,000. It is less likely for them than their non-practicing peers to be married or to have young children. The typical yoga practitioner is also more likely to live in metropolitan areas in the western and northeastern regions of the U.S. (Saper et al., 2004).

### **FIRST RETREAT DESTINATION: ITALY**

For her first yoga retreat destination, Melissa chose a villa in the Italian countryside. Melissa will conduct two one-week retreats in July and offer daily photography workshops in conjunction with the daily yoga classes. The getaway package will include shuttle service to and from the Florence airport, six-night accommodation, twice-daily yoga classes, daily photography workshops, a hiking excursion, a walking tour in a medieval town, and wine tastings. The villa can be rented in part or in full. A partial lease will accommodate up to eight guests, while the full estate accommodates up to 14 guests.

### **DEMAND AND COST STRUCTURE**

During a recent trip to Italy, Melissa met with local businesses to determine the costs of providing services to the villa. Many of the vendors offered steep discounts based on the number of expected guests and the potential for repeat patronage. For instance, renting the entire villa would cost \$8,231 for an estimated maximum of 14 guests, while it would cost \$6,897 toward a partial rental for eight guests or fewer. Thus, the leasing fees increase by 20 percent, but the number of guests could grow by 43 percent. The list of estimated weekly costs is presented in Table 1.

**Table 1.** Estimated Weekly Cost Structure (US\$)

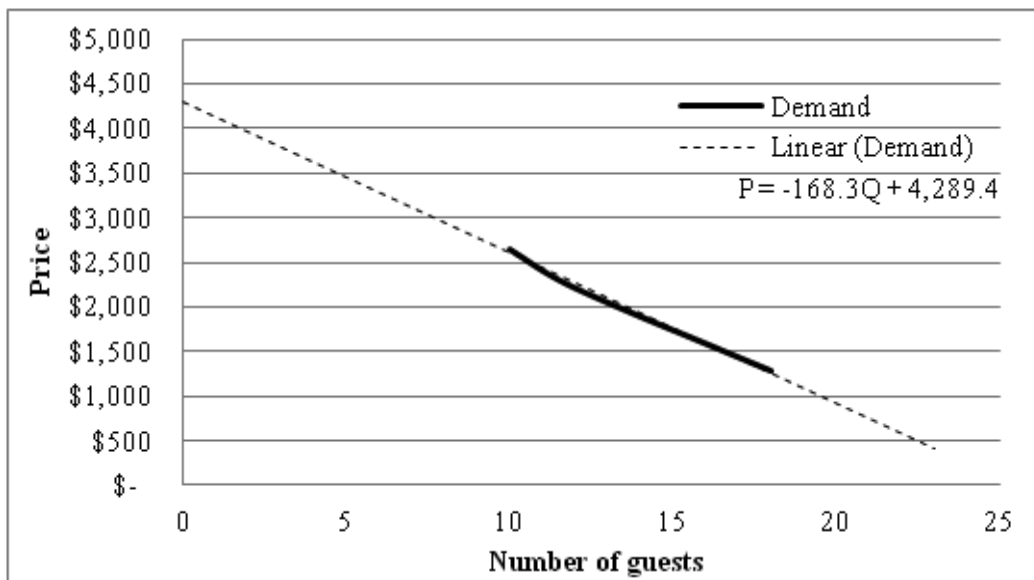
	Number of guests								
	6	7	8	9	10	11	12	13	14
Lease Expense <sup>a</sup>	6,897	6,897	6,897	8,231	8,231	8,231	8,231	8,231	8,231
Yoga Instructor <sup>b</sup>	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Photography Instructor <sup>c</sup>	550	550	550	550	550	550	550	550	550
Yoga instructors' Travel Expenses <sup>d</sup>	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Administrative Expense <sup>e</sup>	400	400	400	400	400	400	400	400	400
Marketing <sup>f</sup>	200	200	200	200	200	200	200	200	200
<b>Excursions</b>									
<i>Walking Tours (2)</i>	400	400	400	400	400	400	400	400	400
<i>Wine Excursion</i>	580	626	677	717	760	806	838	871	906
Shuttle Service	300	340	380	420	450	480	510	535	560
<b>Catering Expense</b>									
<i>Breakfast</i>	456	528	600	564	624	684	744	726	780
<i>Light Dinner</i>	752	868	984	956	1,056	1,156	1,256	1,252	1,344
<i>Tuscan Dinner</i>	486	558	630	648	714	780	846	860	922
<b>Total Estimated Expenses</b>	<b>15,521</b>	<b>15,867</b>	<b>16,218</b>	<b>17,586</b>	<b>17,885</b>	<b>18,187</b>	<b>18,475</b>	<b>18,525</b>	<b>18,793</b>

Notes: <sup>a</sup>The partial-rent of the villa is \$6,897 with a maximum of 8 guests. Full villa rent expense is \$8,231 with a maximum of 14 guests. <sup>b</sup>One-week instructor fees for daily yoga classes. <sup>c</sup>One-week instructor fees for 2-hours daily photography classes. <sup>d</sup>It includes yoga instructor's per diem, lodging, and local travel expenses. The photography instructor is a local resident; thus there is no travel expense for her/him. <sup>e</sup>Administrative costs include international calls, utility bills, and accounting services. <sup>f</sup>Marketing includes online ad placements in targeted publications (e.g. Yoga Journal), as well as social media accounts (e.g. facebook and twitter).

Melissa's goal is to make this Italian retreat profitable and use the experience gained to open new locations throughout the world. While Melissa has been unable to find local competitors who offer both yoga and photography retreats, she has found three competitors who offer services and accommodations that are similar, albeit in different locales and involving different activities. Information regarding prices and group sizes for three competitors, along with a recommended demand curve, is presented in Table 2 and Figure 1.

**Table 2.** Competitors Information

Name	No. Guests	Price	Location	Excludes
Yoga-for-Us Retreats	10	\$2,650	Spain	-
Muse Prana Retreats	12	\$2,213	Mexico	Day trips
Yoga Sky Retreats	18	\$1,275	Montana	Shuttle



**Figure 1.** Estimated Demand Curve

Given the information about her competitors, Melissa struggled to decide how much she should charge, what the market would bear, and how many guests she would need to book in order to maximize her profits. She also wondered what she could do from sales and marketing perspectives to attract sufficient reservations.

**AUTHOR INFORMATION**

**Karla Borja** is the contacting author and an assistant professor of economics at the University of Tampa. 401 W. Kennedy Blvd. Tampa, FL 33606. [kborja@ut.edu](mailto:kborja@ut.edu). Website: <http://www.ut.edu/KarlaBorja/?terms=karlaborja>.

**Melissa Irvine** is an MBA student at the University of Tampa. 2723 N. Ridgewood Ave., Tampa, FL 33602. [melissamirvine@gmail.com](mailto:melissamirvine@gmail.com)

**Troy Land** is an MBA student at the University of Tampa. 10124 Westpark Preserve Blvd., Tampa, FL 33625. [TroyL\\_2002@yahoo.com](mailto:TroyL_2002@yahoo.com)

**Robert Wilson** is an MBA student at the University of Tampa. 4347 Silver Falls Dr., Land O Lakes, FL 34639. [robert.wilson@spartans.ut.edu](mailto:robert.wilson@spartans.ut.edu)

**REFERENCES**

- Birdee, G. S., Legedza, A. T., Saper, R. B., Bertisch, S. M., Eisenberg, D. M., Phillips, R. S. (2008) Characteristics of Yoga Users: Results of a National Survey. *Journal of General Internal Medicine*, 23(10):1653-8.
- Higgins, M. (2010, February 2). Rolling Out the Yoga Mat. The New York Times, Travel. Retrieved from: [http://travel.nytimes.com/2010/02/07/travel/07pracyoga.html?\\_r=0](http://travel.nytimes.com/2010/02/07/travel/07pracyoga.html?_r=0).
- Moran, S. (December 28, 2006). Meditate on This: Yoga Is Big Business. The New York Times, Business. Retrieved from: [http://www.nytimes.com/2006/12/28/business/28sbiz.html?\\_r=0](http://www.nytimes.com/2006/12/28/business/28sbiz.html?_r=0).
- Saper, R. B., Eisenberg, D. M., Davis, R. B., Culpepper, L., & Phillips, R. S. (2004) Prevalence and Patterns of Adult Yoga Use in the United States: Results of a National Survey. *Alternative Therapies in Health and Medicine*, 10(2): 44-49.

## TEACHING NOTES

## Summary

Melissa, an employee of a financial services firm, is contemplating leaving her current position to start *Ignite Your Bliss*, a yoga retreat business in which she conducts weeklong retreats in various locations that combine guests' passion for yoga with other interests, such as photography and cooking. Melissa has estimated the costs of her first retreat and has gathered market and competitor information. She must now determine how many guests she will need to book and how much she can and must charge to maximize profits. Melissa must also consider the sales and marketing activities she will need to pursue to maximize her reservations. Finally, Melissa must ensure that the endeavor will be sufficiently financially lucrative to justify leaving her current position, with its annual salary of \$52,000.

Given the information relevant to this case, we recommend the discussion items below:

1. Describe the market structure within which Ignite Your Bliss is competing. Given the market structure, determine the optimal marketing and price strategies.
2. Using the information provided in Tables 1 and 2 and Figure 1, develop a cost curve analysis that includes a table of total and marginal revenues, total and marginal costs, and average total costs at different levels of output (e.g. number of guests per retreat). Then, numerically and graphically determine the optimal level of output, optimal price per retreat, and total profits (Table 3 and Figure 2 provide possible solutions).
3. Using the information provided in Tables 1 and 2, determine the fixed and variable costs. Calculate and graph the average fixed and variable cost curves and determine the shut-down price.
4. Determine the accounting and economic profits, and define the break-even number of retreats per year required to cover Melissa's opportunity costs.

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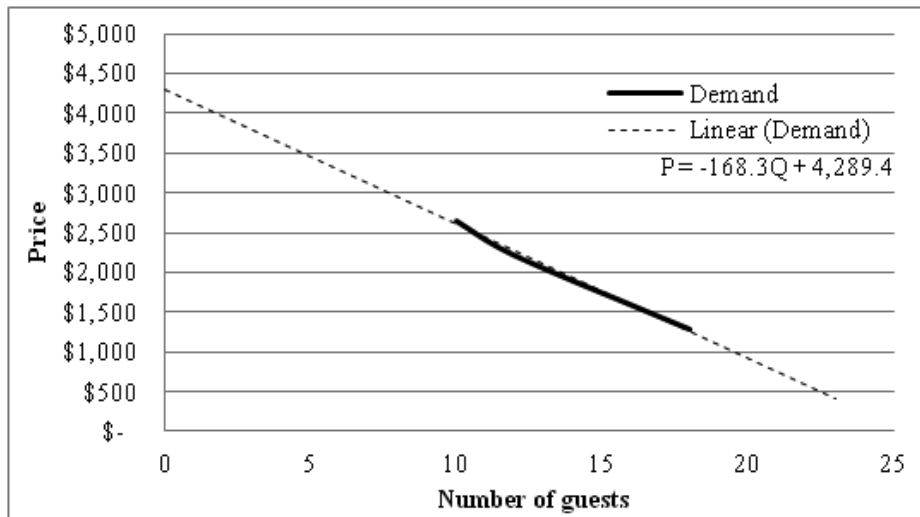
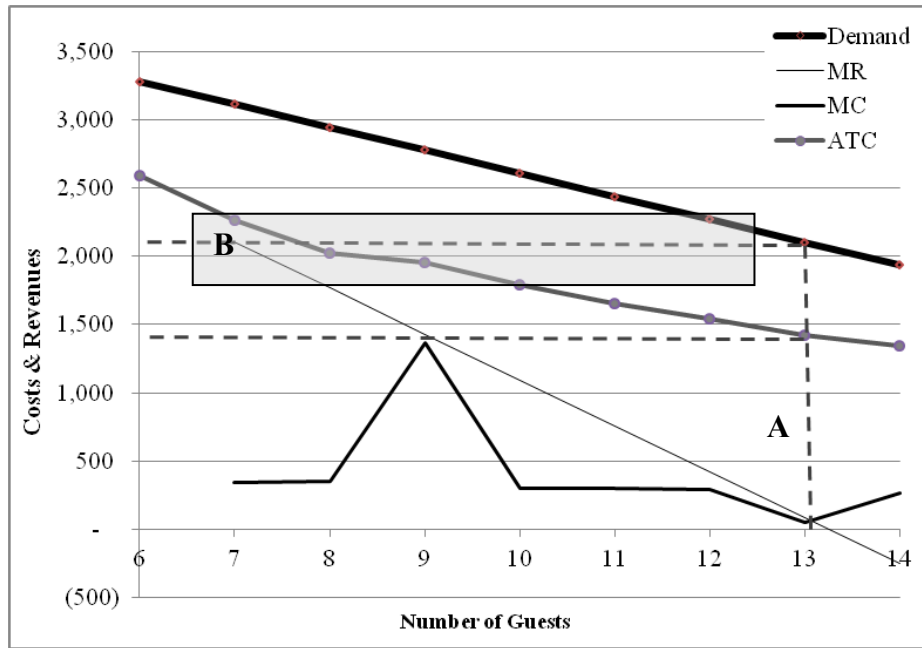


Figure 1. Estimated Demand Curve

Table 3. Cost Curves and Optimal Number of Guests

# Guests (Quantity)	Price	TR (# Guests*P)	MR $\Delta TR/\Delta Q$	TC VC + FC	MC $\Delta TC/\Delta Q$	ATC TC/Q	Profit TR - TC
6	3,280	19,679		15,521		2,587	4,158
7	3,112	21,781	2,102	15,867	346	2,267	5,913
8	2,943	23,546	1,765	16,218	350	2,027	7,328
9	2,775	24,975	1,429	17,586	1,369	1,954	7,389
10	2,607	26,067	1,092	17,885	299	1,789	8,182
11	2,438	26,823	756	18,187	302	1,653	8,636
12	2,270	27,242	419	18,475	288	1,540	8,767
13	2,102	27,325	83	18,525	51	1,425	8,799
14	1,934	27,071	(254)	18,793	268	1,342	8,277



A = Optimal Number Of Guests (MR=MC); B = Total Profit Area

**Figure 2.** Cost Curves and Optimal Number of Guests

**NOTES**