

## Using Popular Music to Teach Principles of Economics: Beyoncé’s Take on Demand and Quantity Demanded

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### Abstract

Academic economists must teach students in principles-level classes the fundamental concepts of economics so that students become informed participants within the democratic process of collective choice over public policy (Boettke, 2011, 2012). Any good student of economics must know the distinction between demand and quantity demanded (Hayne, Boettke, and Prychitko, 2010). Economics is a social science that arrives at knowledge through different epistemological procedures. This paper proposes an active learning exercise that uses the lyrics of the popular song “Irreplaceable,” performed by American R&B singer Beyonce Knowles, to teach students the fundamental concepts of demand and quantity demanded.

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### I. Introduction

Economics is a dismal science that constantly deals with the problem of optimal use of resources given constraints. The distinction between demand and quantity demanded can be confusing even for an adept student because these concepts are drastically different from in the public discourse. General discourse on economic events often uses the term demand as a shorthand term for quantity demanded. Any good student of economics must be aware of these differences (Hayne, Boettke, and Prychitko, 2010, p. 59). Students, however, struggle to grasp the difference between quantity demanded and demand. The distinction between a change in

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demand and a change in quantity demanded is even more challenging to students.

The standard textbook examples such as the ice cream market or butter and margarine cannot communicate the economic ideas effectively to students (Becker, 2000). Students cannot relate to these standard textbook examples with excitement that incentivizes their active learning of economics. When an academic economist explains that the change in the price of the product causes the movement along the demand curve whereas the change in the price of the related product causes the shift in the demand curve, students often get lost in the demand graph.

If academic economists teach students that economics is a powerful social science because it explains how the world around us works, economists must teach students to apply an economic way of thinking not only to general economic issues but also to their daily lives. Students need an active learning approach combined with examples that are current, thought-provoking, and unconventional. This paper presents an active learning exercise that uses the popular song “Irreplaceable,” performed by American R&B singer Beyoncé Knowles, to teach students the fundamental concepts of demand curve and quantity demanded (Hall and Lawson, 2008; Hall et al., 2008).

## **II. Instructional Approach**

A combination of unconventional active learning and application of personal non-expert knowledge facilitate a positive outcome of economic education. College students relate enthusiastically to the discussion of dating and relationships in the context of popular music. First, students can apply the concept of demand to their personal relationship experience. Second, students enjoy the process of epistemological procedure using both qualitative and graphical analysis of very popular lyrics to understand fundamental concepts of economics. I used the following instructional approach in principles-level economics courses at George Mason University in the academic years of 2008–2010 and the University of Texas at Arlington in the 2010–2011 academic year. Student evaluations often mentioned the song and the associated lecture, and the instructional use of the song always received positive feedback from students.

The song “Irreplaceable” has three distinctive features that facilitate the active learning exercise (Knowles et al., 2006).<sup>1</sup> First, the song has a hook that facilitates cognitive engagement from students and subsequent cognitive association between the concept of demand and the song (Smith, 2009). The hook of the song is so distinguishable that students recognize the song by its hook “to the left, to the left” rather than by its original title.<sup>2</sup> Moreover, the song’s hook serves as a reference to the concept of demand. Second, the song has a chorus that effectively teaches students the distinction between a change in demand and a change in quantity demanded. The chorus, a repetitive verse that includes central theme of a song, facilitates the active learning. Third, the song is appealing to both male and female listeners. The song has a universal appeal because it relates to the common experience of a painful relationship with an unfaithful partner. In addition, both the song and the singer Beyoncé are so popular that students remember the active learning example very well.<sup>3</sup>

The active learning exercise requires students to conduct a qualitative analysis of the song “Irreplaceable,” to summarize the information in a table, and to illustrate the information in their table with the aid of the graph. Students can work in groups of two. Before the active learning exercise starts, a brief lecture about the difference between a demand and a quantity demanded is necessary. Students must know that demand is a relationship between two variables: price and quantity demanded. A change in the price of the product causes a change in the quantity demanded and a movement along a demand curve, whereas a change in each of the five determinants of demand causes a change in the demand and a shift in the demand curve.

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<sup>1</sup> The popular American R&B singer Beyonce Knowles recorded the song “Irreplaceable” for her second studio album, B’Day. The album won best Album of the Year at the 50<sup>th</sup> Grammy Awards.

<sup>2</sup> In the music industry, a hook makes a song appealing to the audience. A hook is “a musical or lyrical phrase that stands out and is easily remembered” (see Burns, 1987). It utilizes cognitive features of the human brain by creating a cognitive association between the song’s hook and the song (Smith, 2009).

<sup>3</sup> In December 2006 “Irreplaceable” was released in the United States. Contemporary music critics praised its popular hook “to the left, to the left.” *Rolling Stone* placed the song on its list of Best Songs of the 2000s. The song was the best-selling US single of 2007, the 25th most successful song of the 2000s in the United States, and a double-platinum record. The song’s music video has more than 51 million views on YouTube.

Following the short lecture, students receive their active learning assignment. Students must use Beyoncé’s song “Irreplaceable” to explain the concept of demand. The song starts from the hook:<sup>4</sup>

*“To the left, to the left  
To the left, to the left  
To the left, to the left  
Everything you own in the box to the left”*

As shown in Figure 1, I ask students to draw a graph in which the horizontal axis shows the quantity of relationship and the vertical axis shows the price of the relationship. The quantity demanded represents the quantity of relationship that people are willing to have at the given price.<sup>5</sup> Because students tend to think about relationships and their price as categorical variables, students develop a scale for each variable. For example, zero denotes a breakup, and ten represents a marriage or long-term committed relationship. The price usually has a three-point scale ranging from low to high. Students often measure the price of a relationship using the cost of their time, emotions, and even finances. Undergraduates notice that a decrease in the price of a relationship increases the quantity demanded of relationship. Undergraduates agree that a long-term relationship reduces insecurities between partners and the roller coaster of emotions. Thus, a larger quantity demanded of relationship is associated with lower price of relationship and vice versa. Students also grasp effectively the concept of opportunity cost in the context of a relationship.

Students need to summarize their discussion in a table and then illustrate the information with the aid of the graph in Figure 1. Undergraduates draw a demand curve by plotting these values for each variable and connecting the points together. Next, students

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<sup>4</sup> A teacher can start reading the lyrics of the song to undergraduates or designate a student to read it aloud to the rest of the class.

<sup>5</sup> I prefer to substitute the verb “to have” for “to consume” and “to purchase” because the former relates better to students’ regular experience of economic activity. The following question is a common verbal expression of economic transaction: “Can I have a cup of coffee?” The following question is an uncommon verbal expression of economic transaction: “Can I purchase/consume a cup of coffee?”

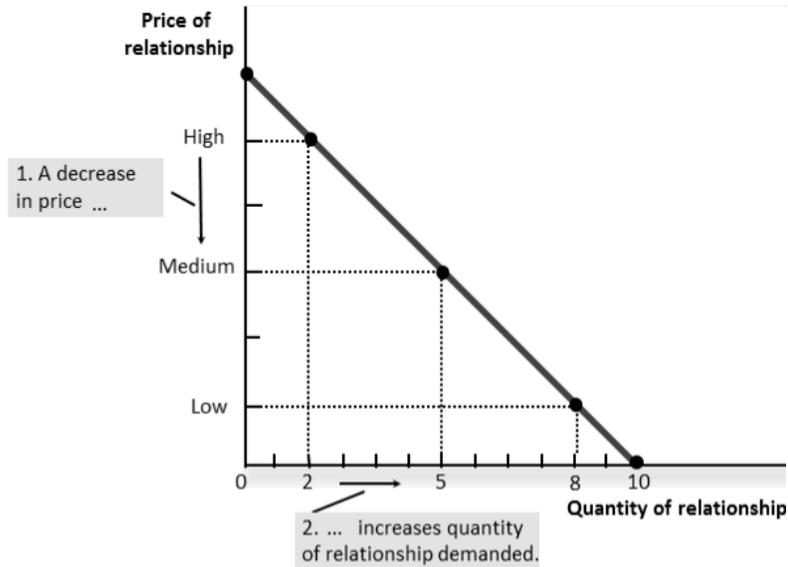


Figure 1. Demand for relationship: demand curve.

sketch a box in the origin of the demand graph. Undergraduates realize that they are illustrating the song graphically. Students must answer the next question: “What do you know about the change in the woman’s demand for the relationship?” Students discover that the woman’s demand curve shifts to the origin of the demand graph when they read the following lyrics:

*“So since I’m not your everything  
How about I’ll be nothing  
Nothing at all to you”*

Thus, students shift the demand curve downward and to the left or “in the box to the left.”

The next question that undergraduates must answer is the following: “What causes the significant decrease in the woman’s demand for the relationship?” Students usually look for determinants of demand: a change in consumer’s income, a change in consumer taste/preferences, a change in consumer expectations, a change in price of related goods/services, and a change in the number of consumers (Hayne, Boettke, and Prychitko, 2010). Some students notice quickly the two verses and chorus that provide the information about the changes in the determinants of the demand for

the relationship. These two determinants are changes in consumer preference or taste and in the price of related goods. Because the demand curve shifts downward and to the left because of two negative changes in the determinants of the demand, the hook of the song emphasizes the goal of the active learning exercise (see Figure 2). The song’s hook counts these changes in the demand: one, “to the left”, and, two, “to the left.”

The first negative change in the woman’s demand for the relationship is the discovery of her boyfriend’s unfaithfulness:

*“Call up that chick and see if she’s home  
 Oops, I bet you thought that I didn’t know  
 What did you think I was putting you out for  
 Because you was [were] untrue”*

The boyfriend’s infidelity reduces the woman’s preference for the relationship significantly. The woman does not want to date the unfaithful man. The negative change in her preferences causes a

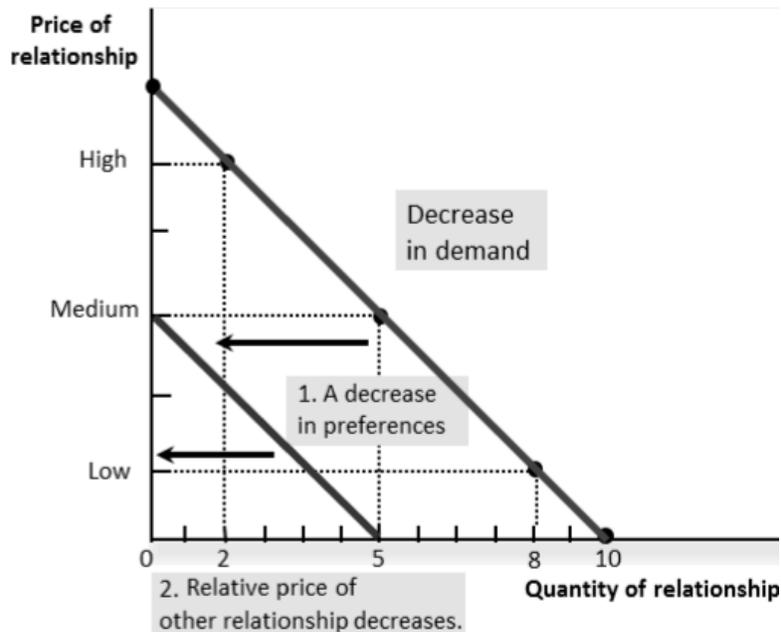


Figure 2. Decrease in demand for relationship.

decrease in the quantity demanded of the relationship. Her demand curve shifts downward and to the left.

The second negative change in the woman's demand for the relationship is the change in the relative price of the substitute relationship:<sup>6</sup>

*"You must not know about me, you must not know about me  
I could have another you in a minute  
Matter of fact, he'll be here in a minute, baby  
You must not know about me, you must not know about me  
I can have another you by tomorrow  
So don't you ever for a second get to thinking  
You're irreplaceable."*

The woman realizes that "replacing you [her boyfriend] is so easy":

*"Baby I won't shed a tear for you  
I won't lose a wink of sleep  
'Cause the truth of the matter is  
Replacing you is so easy."*

Other potential relationships become more attractive and less costly because the boyfriend is unfaithful and thus their relationship is hurtful. Thus, both negative changes in the determinants of the woman's demand for the relationship shift her demand curve to the origin of the graph. Students notice that the woman is no longer interested in the relationship even though the price of the relationship does not change. The active learning exercise is complete when students understand the distinction between demand and quantity demanded. Finally, students receive a homework assignment that asks them to demonstrate how the determinants of demand can increase demand for relationship (see Figure 3).

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<sup>6</sup> Some students point out that the negative change in the woman's expectations about the price of relationship also causes a shift in her demand curve downward and to the left. Students argue that the woman's expectations about the price of the relationship worsen when she discovers her boyfriend's unfaithfulness. The song has no direct reference to this argument, though it is an acceptable argument.

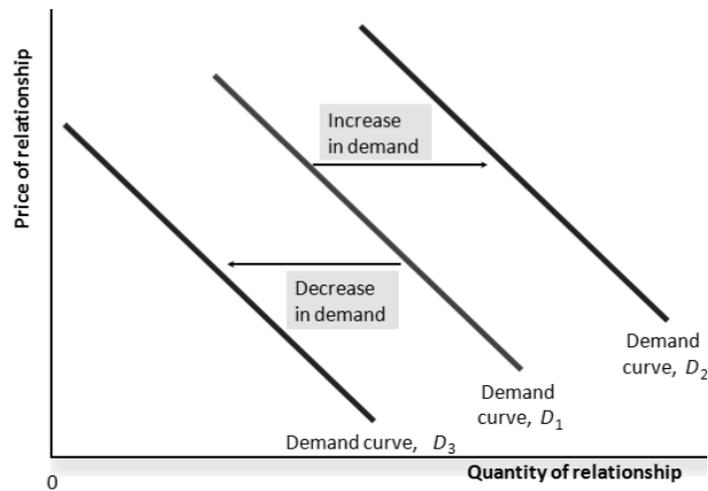


Figure 3. Change in demand for relationship: shifts in demand curve.

### III. Conclusion

Economics does not have to be a dismal science. It is a powerful and important social science that explains how the world around us works. Economics is also a living science because it teaches students to apply their economic way of thinking not only to general economic issues but also to their daily lives (Hayne, Boettke, and Prychitko, 2010, p. 6). Academic economists, however, often use concepts that are different from those in the general discourse. Moreover, a traditional instructional approach combined with the standard textbook examples does not provide an intellectually challenging learning environment for students. Students need an active learning approach that uses examples from their daily lives. The qualitative and graphical analysis of the popular song “Irreplaceable” performed by Beyoncé Knowles is an effective active learning exercise that teaches students the fundamental concepts of demand and quantity demanded.

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### **Appendix: "Irreplaceable" Lyrics**

To the left, to the left  
To the left, to the left  
To the left, to the left

Everything you own in the box to the left  
In the closet that's my stuff  
Yes, if I bought it, please don't touch

And keep talking that mess that's fine  
But could you walk and talk at the same time?  
And, it's my name that's on that Jag  
So come move your bags, let me call you a cab

Standing in the front yard  
Tellin' me, how I'm such a fool  
Talkin' 'bout, I'll never ever find a man like you  
You got me twisted

You must not know about me,  
You must not know about me  
I could have another you in a minute  
Matter of fact, he'll be here in a minute, baby  
You must not know about me,  
You must not know about me  
I can have another you by tomorrow  
So don't you ever for a second get to thinking  
You're irreplaceable

So go ahead and get gone  
Call up that chick and see if she's home  
Oops, I bet you thought, that I didn't know  
What did you think I was putting you out for?

Because you was untrue  
Rollin's her around in the car that I bought you  
Baby drop them keys  
Hurry up before your taxi leaves

Standing in the front yard  
Tellin' me, how I'm such a fool  
Talkin' 'bout, I'll never ever find a man like you  
You got me twisted

You must not know about me,  
You must not know about me  
I could have another you in a minute  
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You must not know about me,  
You must not know about me  
I can have another you by tomorrow  
So don't you ever for a second get to thinking  
You're irreplaceable

So since I'm not your everything  
How about I'll be nothing  
Nothing at all to you  
Baby I won't shed a tear for you  
I won't lose a wink of sleep

'Cause the truth of the matter is  
Replacing you is so easy

To the left, to the left  
To the left, to the left  
To the left, to the left  
Everything you own in the box to the left  
To the left, to the left  
Don't you ever for a second get to thinking  
You're irreplaceable

You must not know about me,  
You must not know about me  
I could have another you in a minute  
Matter of fact, he'll be here in a minute, baby  
You must not know about me,  
You must not know about me  
I can have another you by tomorrow  
So don't you ever for a second get to thinking

You must not know about me,  
You must not know about me  
I can have another you in a minute  
Matter of fact, he'll be here in a minute

You can pack all your bags  
We're finished  
'Cause you made your bed  
Now lay in it  
I can have another you by tomorrow  
Don't you ever for a second get to thinking  
You're irreplaceable.