



All I Want for Christmas is an A on My Econ Final: A Holiday-Themed Review Class

Traditionally, final exams for the fall semester are sandwiched between Thanksgiving and the winter holiday season. Regrettably, the flurry of academic and extracurricular events creates an atmosphere ripe for distracted or reluctant students. The goal of this paper is to help instructors of undergraduate economics classes design a cumulative review class using familiar holiday movies. By harnessing the excitement of the season in a fun but applicable way, instructors can help students focus on finishing the semester strong. The topics suggested for review are basic economics concepts from an introductory level course including opportunity costs, comparative advantage, shortages, elasticity of demand, GDP, unemployment, inflation, production functions, and the banking system.

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1. Introduction

The final weeks of the fall semester may be the most critical time to provide students with engaging material to help overcome competing distractions at the end of the term. When undergraduate students come back from Thanksgiving weekend to finish classes, students experience firsthand the opportunity costs of enjoying holiday activities versus thoroughly preparing for exams. In the last days before break, students need to complete term projects and study for exams, all while student organizations and dorms host holiday functions and students make plans to go home for winter break.

Amid this flurry of activity at the end of the semester, many instructors plan review material for final exams. If a final exam is cumulative, some of the topics students will be tested on may not have been explicitly talked about in class since September. An effective review can help students recall key concepts and prepare for a strong performance on the final.

Since final exam and holiday preparations are already occurring simultaneously, why not bring the two together into the classroom? The goal of this paper is to provide ideas and resources to help instructors construct a holiday-themed review class. Using the examples in this paper, instructors can show popular Christmas films and then point out and review core economic concepts that students have learned throughout the semester. There is evidence that Christmas movie clips are already used individually in the classroom throughout the semester, however, no authors have created a compilation of these examples based on the holiday theme. Reviewing for an economics final exam by watching classic Christmas film clips may be an effective way to motivate students to finish the semester strong in their studies.

2. Literature Review

The benefits of using innovative ideas to teach undergraduate economics have been widely discussed across literature (Becker, 2004; Becker & Watts, 1996; 2001; 2008). One approach to move beyond traditional “chalk and talk” lectures is to incorporate multimedia including film and television clips directly into the classroom. The goal of using pop culture references is to attract the attention of students who may be unresponsive in a lackluster lecture environment (Geerling, 2012). At the same time, it offers the opportunity to show economics alive and at work in the real world, not merely relegated to the pages of a textbook. Numerous articles and even student workbooks demonstrate how clips from popular films can be used to illustrate economic concepts (Leet and Houser, 2003; Mateer 2005; Mateer, O’Roark, & Holder, 2016). Likewise, popular television series, including *Seinfeld*, *The Simpsons*, *The Office*, and *The Big Bang Theory* have been used to relate economic concepts to students (Ghent, Grant, & Lesica, 2011; Hall, 2005; Luccasen & Thomas, 2010; Kuester, Mateer, & Youderian, 2014; Tierney, Mateer, Smith, Wooten, & Geerling, 2016).

The effectiveness of pre-exam review sessions has been examined across different disciplines at the undergraduate level. Several studies found that attending optional review sessions for university science and psychology classes was associated with higher exam scores, although it was unclear whether the sessions directly contributed to the higher grade or if the higher grade was a result of self-selection (Aamodt, 1982; Jensen and Moore 2009; King 2010). A study of undergraduate physiology students showed that review sessions structured to incorporate active student participation were correlated with higher exam performance (Poole and Moore, 2016). Moryl, Gabriele, and Desvira (2019) reported positive student feedback regarding test preparation after reviewing with an innovative game in an economics course.

There is evidence that individual Christmas films are already incorporated in the

classroom to explain economics topics (Leet & Houser, 2003; Mateer, 2005; Mateer, O’Roark & Holder, 2016; Philpot & Oglesby, 2005; Sexton, 2006). A search of economics topics made available by Critical Commons, an archive of educational-related media clips, for example, reveals several contributions from Christmas movies. However, there have been no articles that exclusively compile economics examples from holiday-themed film and media or suggest presenting them to accompany the holiday season. The following assemblage will help fill this gap.

3. Economic Topics

This section presents examples from well-known Christmas movies that illustrate core concepts taught in an introductory economics course. The goal of this paper is to provide an outline for instructors to use these movie clips to review these topics prior to a final exam. A listing of the economic concepts discussed in this paper with corresponding movie excerpt locations is provided in Appendix A. All clips can be found on the Economics Media Library website (Wooten, 2018).

There are different ways that the material in this section could be used in a review context. Instructors could show a short clip from a movie in the classroom, or students could be assigned to watch the clips in advance of the lecture. Since students should be familiar with the concepts that have been introduced throughout the semester, instructors could ask students how specific concepts are illustrated in the clips or why movie characters acted the way that they did based on what students have already learned.

The remainder of this section will provide examples from Christmas movies for the following economic topics: opportunity costs, comparative advantage, price response to shortage, elasticity of demand, GDP, unemployment, inflation, production functions, the banking system, and expectations of future income/wealth. Appendix B includes related practice problems to accompany the movie clips. Students could work on these problems independently (perhaps for extra credit) or the instructor could demonstrate the problems on the board after showing the clip in the classroom.

A. Choice/Opportunity Costs

Would you be willing to give up a cherished holiday spent at home in order to go on a cruise in the tropics? That is the question the Krank family faces as they come to terms with the fact that the opportunity cost of going on a cruise is having Christmas at home (*Christmas with the Kranks*, 2004). That means no Christmas tree, no greeting cards, and no honey-baked ham. The Kranks are determined to stick with their decision to ditch Christmas at home, despite relentless neighbors who do not approve of their choice. Ironically, the Kranks have a change of heart when their college-aged daughter unexpectedly decides to come home for the holidays, triggering a flurry of activity as the Kranks hastily attempt to host Christmas at home after all.

B. Comparative Advantage

In the movie *Elf* (2003), Buddy the Elf, played by Will Ferrell, struggles with being a human in an elf world. Although he attempts to fit in, Buddy has always been the misfit, and as hard as he tries, he cannot keep pace with the other elves while toy-making in Santa’s workshop. When his elf supervisor Ming Ming comes to check on his progress, Buddy confesses that he has only made 85 Etch A Sketches, putting him off target by 915 units:

Buddy: Why don’t you just say it? I’m the worst toy maker in the world. I’m a cotton-headed ninny-muggins.

Ming Ming: No, Buddy, you’re not a cotton-headed ninny-muggins. We all just

have different talents, that's all.

Buddy: Seems like everyone else have the same talents except for me.

Ming Ming: You... you have, you have lots of talents, uh... Special talents in fact, like Um, uh... Special talents?

Female Elf: You changed the batteries in the smoke detector.

Ming Ming: : You sure did... triple A's. And in six months, you'll have to check 'em again... Won't he?

Male Elf: And you're the only baritone in the elf choir. You bring us down whole octave.

Another Male Elf: In a good way.

Ming Ming: See, Buddy? You're not a cotton-headed ninny-muggings. You're just... special.

(Elf, 2003)

Without a doubt, the other elves have an absolute advantage in toy-making, a job highly esteemed among elves. In a feeble attempt to reassure Buddy, the other elves point out that Buddy has some clear "human" absolute advantages of his own, including changing the batteries in the smoke detector and singing baritone in the elf choir.

Nevertheless, even without an absolute advantage in toy-making, Buddy can still contribute to the North Pole's toy shop production in a significant way. After the exchange regarding Buddy's unsatisfactory toy output, Buddy begins a new job in quality control testing Jack-in-the-Boxes to make sure none are defective. While this job may not be as prestigious as toy-making in Santa's workshop, it is still a position that needs to be filled. Buddy has a comparative advantage in toy testing because he has a lower opportunity cost in this task. In other words, the elves are more valuable as toy makers and, therefore, to assign them to be toy testers would come at a greater cost in terms of how many Etch A Sketches would not be produced. By assuming this role, Buddy is increasing overall productivity at the North Pole more than if other elves were to fill the quality control position instead.

We can draw this same conclusion by examining the hypothetical production possibility frontiers (PPF) for Ming Ming and Buddy graphed in Figure 1.¹ By specializing in their respective comparative advantages, Buddy and Ming Ming can achieve Point C, which represents a level

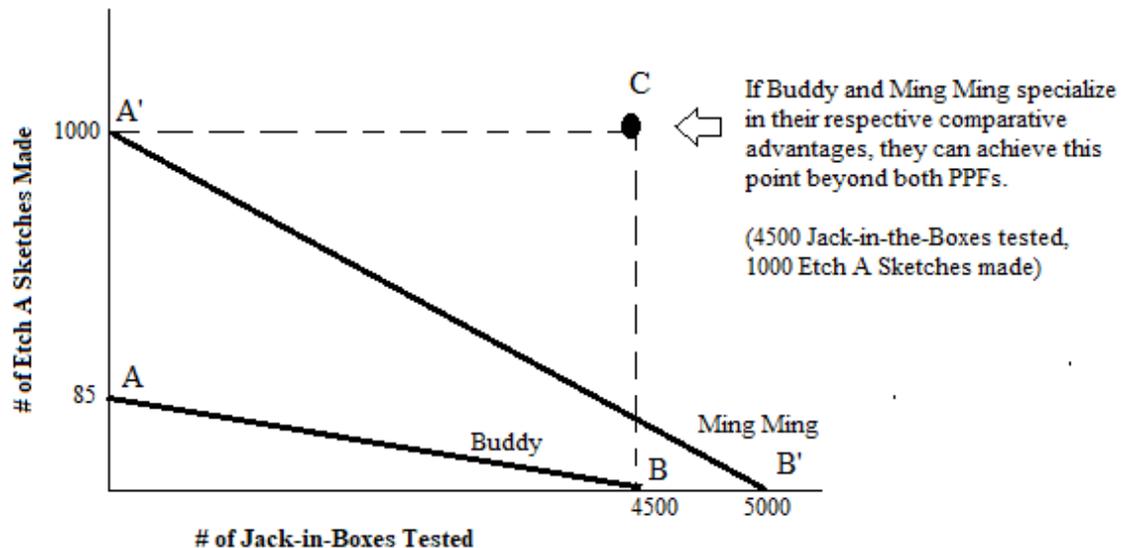
¹The two PPFs show all efficient combinations of outputs the two characters can produce, respectively. Each axis of the graph represents the two types of output: Jack-in-the-Boxes tested (X) and Etch A Sketches made (Y). According to the graph, if Buddy works all day, he can make 85 Etch A Sketches and test 0 Jack-in-the-Boxes, or in that same time, he can test 4500 Jack-in-the-Boxes and make 0 Etch A Sketches. These two outcomes are represented by the endpoints A and B, respectively on Buddy's PPF. Buddy's PPF line indicates that he can accomplish a mix of the two tasks in between the two endpoints. Ming Ming's PPF is interpreted similarly. If Ming Ming works all day, he can make 1000 Etch A Sketches and test 0 Jack-in-the-Boxes (Point A'); alternatively, he can test 5000 Jack-in-the-Boxes and make 0 Etch A Sketches (Point B').

Ming Ming has an absolute advantage in both tasks relative to Buddy. In a given day, Ming Ming can make a maximum of 1000 Etch A Sketches while Buddy can only make a maximum of 85 Etch A Sketches. Likewise, Ming Ming is able to test absolutely more Jack-in-the-Boxes than Buddy (5000 > 4500). Ming Ming's absolute advantage in both tasks is visually apparent in Figure 1 because his PPF lies above Buddy's on both axes.

Because Buddy and Ming Ming each have a PPF that is straight (not bowed), each character deals with a constant trade-off between producing Etch A Sketches and testing Jack-in-the-Boxes. Buddy tests 4500 Jack-in-the-Boxes for every 85 Etch A Sketches he makes. That means his trade-off between testing Jack-in-the-Boxes and making Etch A Sketches is 4500:85 or 1 : 0.0189. Correspondingly, Ming Ming's toy-testing to toy-making ratio is 5000:1000 or 1 : 0.2. These ratios represent the opportunity cost of testing one Jack-in-the-Box. Since Buddy only gives up 0.0189 of an Etch A Sketch in the time it takes him to test one Jack-in-the-Box, while Ming Ming must give up producing 0.2 of an Etch A Sketch, Buddy has a lower opportunity cost and therefore, a comparative advantage in the task of testing Jack-in-the-Boxes.

of output beyond their own production possibility frontiers. Appendix B includes review problems related to this movie clip.

Figure 1 – Production Possibility Frontiers for Elf



C. Price Response to Shortage

The surge of shopping that transpires in the holiday season provides a timely review of supply and demand mechanics at work. Multiple Christmas films include shopping scenes, which are fitting for discussion. The movie *Jingle All the Way* (1996) follows Howard Langston, played by Arnold Schwarzenegger, who is desperately trying to purchase a popular action figure known as "Turbo Man" for his son in the final days before Christmas. While shopping, the action figure becomes increasingly hard to acquire as the quantity of the action figure demanded by frenzied parents exceeds the quantity of the action figure supplied. In response to the shortage, the store manager announces to the store patrons that the store has obtained a small quantity of the "Turbo Man" doll, however, "in accordance with the laws of supply and demand, the new list price on each figure just doubled" (*Jingle All the Way*, 1996).

Graph 1 shows a hypothetical model of the situation in *Jingle All the Way*. Suppose the initial list price for Turbo Man is \$25 per action figure. In the graph, we can see that at a price of \$25, demand exceeds supply by 500 units. This represents the initial shortage, corresponding to the frantic mob in the toy store. The toy store will raise their price as long as excess demand exists; in this case, the list price doubles to \$50. At this point in the graph, we have reached equilibrium, where demand is equal to supply.

D. Elasticity of Demand

Instructors can also use last-minute Christmas shopping as an opportunity to explain price elasticity of demand. Consumers may not normally be willing to pay higher prices for certain goods, but in the final hours before Christmas, their demand for the good may become increasingly inelastic. In other words, their demand may not be very responsive to price changes, and they may be willing to pay higher prices to obtain the sought after gifts and other Christmas necessities. In *Christmas with the Kranks* (2004), we see Luther Krank (Tim Allen) early in the movie adamantly turning down an opportunity to buy a beautiful Christmas tree from

the local Boy Scouts. Later, when the Kranks reverse their decision to skip Christmas, Luther desperately tries to purchase any Christmas tree from the same Boy Scout. There is only one spindly and pathetic tree left, and now the uncompromising boy offers it to Luther for a firm \$75 price. Commenting that the deal is “kind of a rip-off,” the boy’s father smiles and responds, “supply and demand” (*Christmas with the Kranks*, 2004). Just as the shoppers seeking the Turbo-Man action figure in the previous example face a higher price directly before Christmas, so too Luther must pay the price for his last-minute demand. In each case, the producers benefit from frantic consumers willing to pay a higher price than usual, as illustrated by a relatively steeper or inelastic demand curve.

E. GDP

The North Pole is a useful illustration of an economy and an opportunity to review how to calculate nominal and real GDP. Production in Santa’s workshop by the elves illustrates assembly-line efficiency and tangible output in the number of toys produced. Students can view the clip from *Santa’s Workshop* (1932), then practice calculating nominal GDP using given prices to value the toys (see Appendix B for practice problems). Among the toys being made in the clip are rocking horses, building blocks, checkerboards, and dolls. Showing the assembly-line process is a chance to remind students that intermediate goods (such as doll clothing) should not be included in the calculation of GDP because they are already incorporated in the final good of a doll.

Are North Pole elves more or less productive this year than in past years? Students can use the hypothetical data to calculate the real GDP to find out. The example problems in Appendix B provide data for year 2001 and 2021. After calculating nominal GDP for both years, they can calculate the real GDP using 2001 as a base year. Students should see that, although prices have changed since 2001, the real GDP calculation will reveal that overall production has gone up as well.

F. Unemployment

Several characters in *Rudolph the Red-Nosed Reindeer* (1964) experience job loss challenges, allowing students to revisit the topic of unemployment. In Santa’s workshop, we first encounter Hermey, the elf that does not like to make toys, but instead wants to be a dentist. After a confrontation with the head elf, he declares, “they can’t fire me, I quit” and leaves the toy shop (*Rudolph the Red-Nosed Reindeer*, 1964). Although Hermey clearly possesses both toy-making abilities and dental knowledge, and is capable of holding a job, he is currently experiencing a transitional period of frictional unemployment.

Later in the movie, we see more joblessness on the Island of Misfit Toys. The island accommodates many toys with supposed defects, including a polka-dotted elephant, a train with square wheels, a water pistol that shoots jelly, and a Jack-in-the-Box named “Charlie.” The profession of a toy is to provide entertainment for a child, so until these toys are matched with a kid, they can be classified as unemployed.

Many of the toys on this island seem to have given up hope of finding a child after remaining on the island for so long. As they anxiously await Christmas Eve, the doll sobs, “I haven’t any dreams left to dream. We’ll never get off this island. Never” (*Rudolph the Red-Nosed Reindeer*, 1964). The doll’s despair indicates that some of the toys are on the brink of becoming discouraged workers (workers who have not actively looked for work in the past four weeks because they believe there are no jobs available for them) and may drop out of the workforce altogether. Fortunately, with the help of Rudolph, Santa arrives and promises to find homes for the toys, so that these “workers” can be plugged back into the workforce.

G. Inflation

A scene from *Harry Potter and the Sorcerer's Stone* (2001) illustrates the problems created by "gift-giving" inflation, which is appropriate for the holiday season. Harry Potter's spoiled cousin Dudley Dursley has the following exchange with his parents on his birthday about the number of gifts he has received:

Dudley Dursley: How many are there?
Uncle Vernon: 36, counted them myself.
Dudley Dursley: 36! But last year, last year I had 37!
Uncle Vernon: Yes, yes, but some of them are quite a bit bigger than last year.
Dudley Dursley: I don't care how big they are!
Aunt Petunia: This is what we're going to do. We're going to buy you two new presents. How's that, pumpkin?

(*Harry Potter and the Sorcerer's Stone*, 2001)

Dudley's overindulging parents conclude that they need to give Dudley more presents than the previous year to pacify their son's greedy anticipation. A given quantity of gifts loses its value over time if there has been a trend of increasing amounts over time, which produces an expectation that the pattern will continue into the future.

H. Production Functions & Increase in Technology

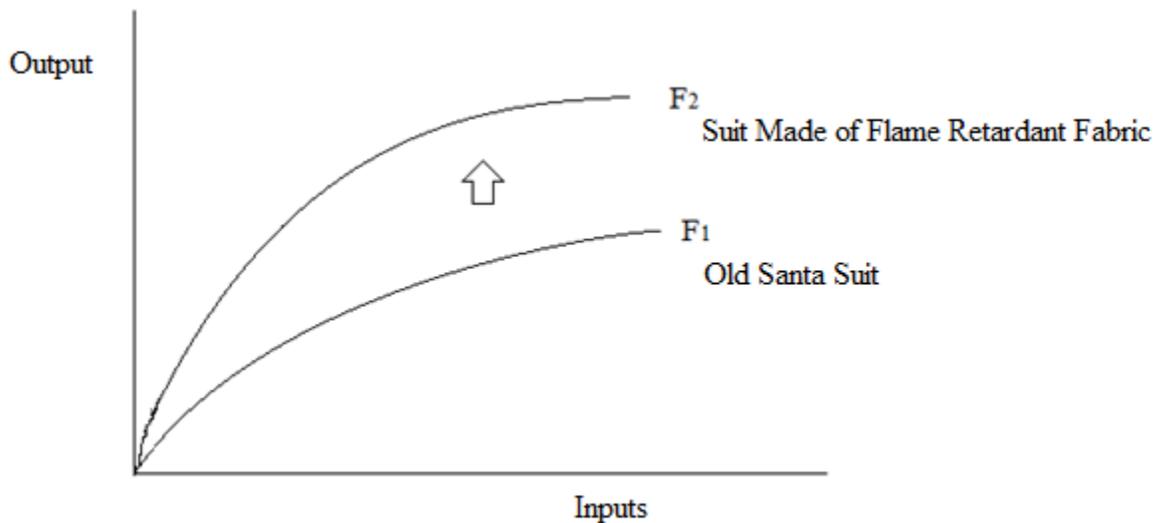
"How can one man in one night visit all the children of the world?...What about fireplaces? A lot of people don't have them. How does Santa visit those people?... What about the reindeer? Have you ever seen a reindeer fly?" --Neil from The Santa Clause (1994)

The logistics of Santa's magic ride around the world on Christmas Eve are difficult for the skeptics to accept.² However, if Santa had advanced technology, some might find it easier to rationalize. In *Elf* (2003), while Santa's sleigh was formerly powered by "Christmas spirit," Santa laments that he has had to upgrade over the years because of all the non-believers. Now, Santa's sleigh runs on a "Kringle 3000," a 500-reindeer power jet turbine engine. In the movie *The Santa Clause* (1994), the elves come up with other technological advancements to make Santa more productive: a flame retardant Santa suit, a hat lined with a two-way radio, and a cookie/cocoa dispenser for the sleigh.

All of these improvements work to shift up Santa's production function, allowing him to generate more output. We can use the elves' improvements in *The Santa Clause* as an example. Figure 2 illustrates Santa's production function before and after the elves create a flame retardant Santa suit. The upward shift (from F_1 to F_2) shows that with the aid of the new fabric (an increase in technology), Santa can accomplish more (produce more output) at every level of his own inputs. This is logical, since Santa will spend less time worrying about and dealing with fireplace complications that might slow him down, allowing him to focus on delivering toys. However, the new suit will only help with fireplaces, not other potential concerns (dogs, house alarms, etc...), so Santa will still experience diminishing returns and the leveling out of the production function. However, the suit will make Santa's work more productive and prevent unwanted burns.

²Santa does not really fly 'around' the world. Santa travels north and south, delivering presents one time zone at a time, essentially staying in a fixed zone as the Earth spins towards the East (the oceans allow him to catch up if high density areas slow him down).

Figure 2 – Santa’s Production Function (The Santa Clause)



I. Banking System

The well-known bank-run scene from *It's a Wonderful Life* (1946) may not be a new resource for economics instructors, but this poignant clip from the classic Christmas film imparts an effective illustration of how the banking system works. A basic search of “It’s a Wonderful Life” with “teaching economics” turns up numerous resources and ideas for instructors on how to incorporate the scene into a classroom (Balkenborg, et al, 2011; Leet & Houser, 2003; Mateer, 2005; Mateer, O’Roark & Holder, 2016; Philpot & Oglesby, 2005; Sexton, 2006).

In the movie, the main character George Bailey (played by Jimmy Stewart) provides students with a review of how the fractional banking system works by reminding them that the deposits from patrons are not all kept in a vault in the bank:

You’re thinking of this place all wrong. As if I had the money back in a safe. The money’s not here. Your money’s in Joe’s house, that’s right next to yours. And in the Kennedy house, and Mrs. Macklin’s house, and a hundred others. Why, you’re lending them the money to build, and then, they’re going to pay it back to you as best they can. Now what are you going to do? Foreclose on them?
(*It’s a Wonderful Life*, 1946)

When depositors take their money to the bank, banks are required by law to keep a fraction of the deposits as cash in the vault (required reserves). The remainder can be used to make loans to other bank customers. As George describes, the money finds its way into other people’s homes to be used in the economy (expanding the money supply). Bank patrons typically do not withdraw all their deposits from banks simultaneously. However, when historical panics have occurred, it has understandably created concern that a bank could default and fail to recover the patrons’ money. This scene from *It’s a Wonderful Life* represents the origins of the Federal Deposit Insurance Corporation (FDIC) during the Great Depression as a means to help protect against future bank runs by insuring bank deposits.

J. Expectations of Future Income/Wealth

For most of the year, buying gifts makes up a relatively smaller percentage of overall consumption, but when December comes, the family budget might look a little different to

accommodate the extra spending that takes place. In *National Lampoon's Christmas Vacation* (1989), Clark Griswold anxiously awaits his annual Christmas bonus to help cover the costs of an especially large gift. Anticipating that he will be receiving extra pay from his job, Clark puts a down payment on a swimming pool as a surprise for his family. As time passes and the bonus still does not arrive, Clark grows increasingly stressed, until he finally receives a letter from his company on Christmas Eve containing what he thinks is his bonus. Before he opens the letter, he apologizes to his family for his behavior due to his anxiety admitting that "until this little miracle arrived, [he] didn't have the money to cover the check" [for the swimming pool] (*Christmas Vacation*, 1989). In the humorous and ironic spirit of the movie, when Clark opens the letter, it turns out that instead of his usual bonus, he has received a one-year subscription to the Jelly-of-the-Month Club.

If Clark had known that he would not be receiving his usual bonus, it would not have been a rational choice to make a purchase that he could not cover. However, Clark's decision to put down money on a pool in advance of receiving his bonus reflects reasonable expectations of future income/wealth (and explains his subsequent outburst upon learning about the Jelly-of-the-Month Club alternative to a bonus). Consequently, this scenario illustrates how future expectations can shift demand.

The scene could also launch a review of how fiscal policy works. The government makes efforts to stimulate the economy or increase aggregate demand through expansionary policy. Cutting taxes is one way to achieve this macroeconomic goal. If the government reduces taxes, people will have more income left over to spend on consumption, thereby increasing aggregate demand. As we see in *Christmas Vacation*, people will increase their spending if they believe that they have more money available for use.

5. Conclusion

Hosting a holiday-themed economics review class (ugly sweaters optional) is a fresh way to prepare students for final exam material in undergraduate economics courses. Instructors can take advantage of the seasonal fun by using popular Christmas films to review economics concepts that students have learned throughout the semester. Santa may not be able to give students an "A" on their econ exam, but with the help of effective motivation, students may be able to achieve it on their own.

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Appendix A

Topic	Movie	Location
Opportunity Costs	<i>Christmas with the Kranks</i>	https://econ.video/2022/03/13/christmas-with-the-kranks-skipping-christmas/#more-5961
Comparative Advantage	<i>Elf</i>	https://econ.video/2022/03/13/elf-buddys-comparative-advantage/#more-5962
Price Response to Shortage	<i>Jingle All the Way</i>	https://econ.video/2017/08/09/jingle-all-the-way-elasticity-of-turboman/#more-514
Elasticity of Demand	<i>Christmas with the Kranks</i>	https://econ.video/2022/03/13/christmas-with-the-kranks-christmas-tree-demand/
GDP	<i>Santa's Workshop</i>	https://econ.video/2022/03/16/walt-disney-santas-workshop/
Unemployment	<i>Rudolph the Red-Nosed Reindeer</i>	https://econ.video/2022/03/16/rudolph-the-red-nosed-reindeer-dentist-dreams/
Unemployment	<i>Rudolph the Red-Nosed Reindeer</i>	https://econ.video/2022/03/16/rudolph-the-red-nosed-reindeer-island-of-misfit-toys/#more-6017
Inflation	<i>Harry Potter and the Sorcerer's Stone</i>	https://econ.video/2022/03/18/harry-potter-and-the-sorcerers-stone-not-enough-presents/#more-6031
Change in technology	<i>The Santa Clause</i>	https://econ.video/2022/03/13/the-santa-clause-technological-improvement/
Banking System	<i>It's a Wonderful Life</i>	https://econ.video/2017/11/06/its-a-wonderful-life-bank-run/
Expectation of Future Income/Wealth	<i>Christmas Vacation</i>	https://econ.video/2022/03/13/christmas-vacation-expected-future-earnings/

Appendix B: Examples of Movie Practice Problems for Review of Economics Topics

1. Elf: Comparative Advantage

Buddy the Elf and Ming Ming are elves in Santa's workshop.

	Output per day	
	Etch A Sketches Made	Jack-in-the-Boxes Tested
Buddy the Elf	85	4500
Ming Ming	1000	5000

a. Who has the absolute advantage in each task?

ANSWER: Making Etch A Sketches – Ming Ming
Testing Jack-in-the-Boxes – Ming Ming

b. What is the opportunity cost of a testing one Jack-in-the-Box for each elf?

ANSWER: Buddy: 1 Jack-in-the-Box = 0.0189 Etch A Sketch
Ming Ming: 1 Jack-in-the-Box = 0.2 Etch A Sketch

c. Based on your answer in part (a), who has a comparative advantage in testing Jack-in-the-Boxes?

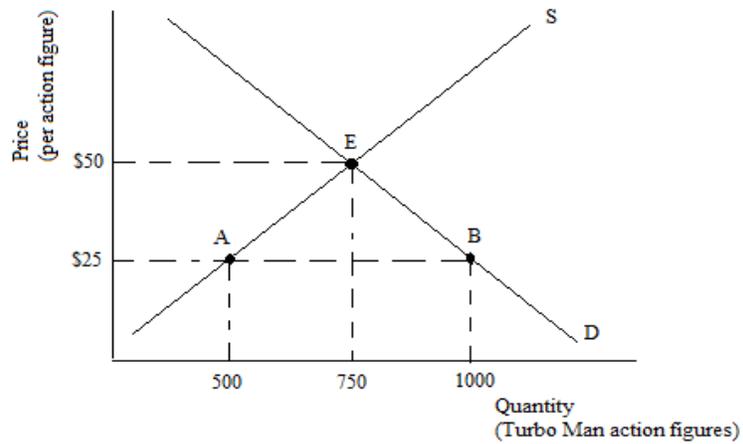
ANSWER: Buddy has a lower opportunity cost, and therefore has the comparative advantage in testing Jack-in-the-Boxes.

d. If the two elves decide to specialize, who should produce the Etch A Sketch and who should test Jack-in-the-Boxes?

ANSWER: Making Etch A Sketches – Ming Ming
Testing Jack-in-the-Boxes – Buddy

2. Turbo Man: Supply & Demand

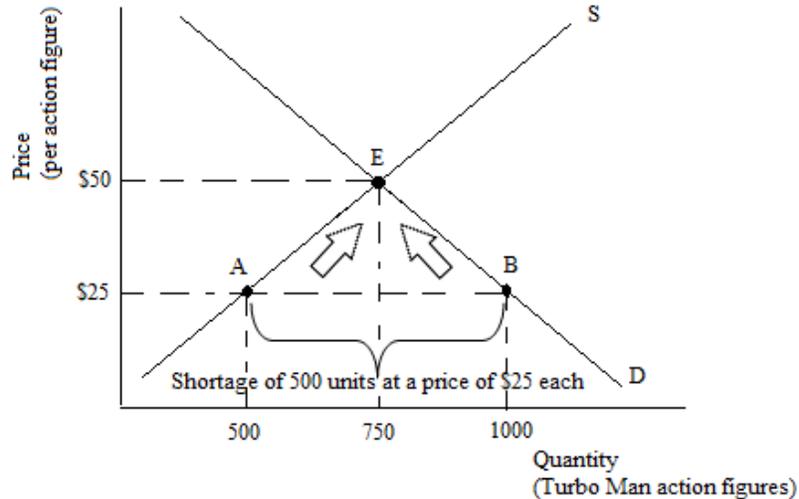
Suppose the following graph illustrates the market for Turbo-Man action figures at Christmas:



a. What is the equilibrium quantity? Equilibrium price?

ANSWER: 750 action figures, \$50

b. If the actual price is \$25 per action figure, what would drive the market toward equilibrium?



ANSWER: At \$25, demand exceeds supply by 500 units (SHORTAGE). Prices will rise as long as excess demand exists.

3. Santa's Workshop: GDP

North Pole GDP
Production & Price Statistics for 2021

Product	Quantity	Price
Rocking horse	250	\$50
Building blocks	1000	\$10.50
Checkerboard	750	\$14.50
Doll clothing	300	\$8
Dolls	300	\$25

*All doll clothing is made for dolls

a. What is the nominal GDP for the North Pole workshop in 2021?

ANSWER: $(250 * \$50) + (1000 * \$10.50) + (750 * \$14.50) + (300 * \$25) = \$41,375$

Calculating Real GDP

Product	2001		2021	
	Quantity	Price	Quantity	Price
Rocking horse	300	\$45	250	\$50
Building blocks	900	\$8	1000	\$10.50
Checkerboard	725	\$12	750	\$14.50
Dolls	250	\$26	300	\$25

*Assume the base year is 2001.

b. Calculate the real and nominal GDP for 2001 and 2021:

	2001	2021
Nominal GDP	\$35,900	\$41,375
Real GDP	\$35,900	\$36,050