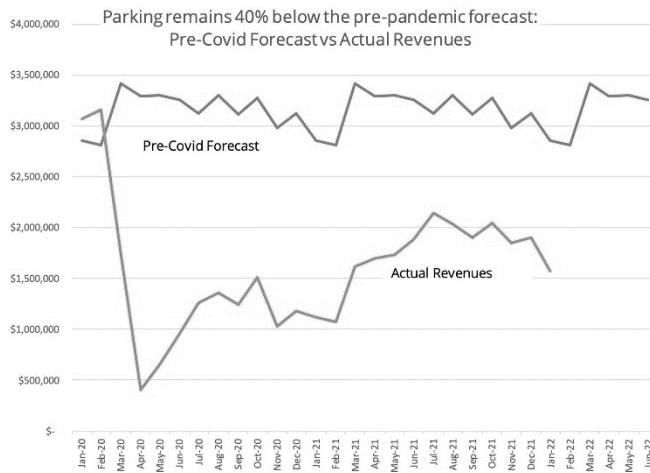


Problem Set #1 (Due 02/07/2024 by 10a; hand in on paper at beginning of class; if you cannot attend that day, leave in my mailbox, Urban 350)

For full credit, please show your work!

■ **OUR CURRENT FINANCIAL PICTURE: PANDEMIC EXACERBATED CHALLENGES**



This was a big problem before 2020.

The pandemic made it worse.

- Expecting \$88M in lost revenue due to the pandemic compared to earlier forecasted expectations

PBOT needs \$30M+ to balance five-year forecast and \$130M+ to balance the ten-year forecast

1. 13 PORTLAND.GOV/TRANSPORTATION



Portland, like other cities, saw significant decreases in downtown parking demand during the pandemic and after.

- a. Sketch an (inverse) demand graph showing parking market equilibrium at 3 time points: pre-Covid 2020, Covid (April 2020), and post-Covid (2022). Also label revenue areas for pre- and post-Covid periods. The city sets the market price, so you can assume price does not respond to the demand change.
 - b. Briefly explain in words what your demand plots show.
 - c. In mid-2022, PBOT announced that it would be implementing two parking rate increases for a total of 60 cents. Sketch a demand graph showing the impact of the price increase, and very briefly describe the effect in words.
 - d. Choose any travel mode other than driving, and explain how the parking fee increase might impact the market for that mode. What key piece of economic information would we need to know *how much* the impact would be?
2. To offset rising costs, Portland’s transit agency TriMet wants to *increase* fares by 10%. They expect no changes in transit demand. Assume the short-run price elasticity of demand is equal to 0.3 (close to the Simpson-Curtin rule value of 1/3).
 - a. Sketch and label a simple (inverse) demand curve that clearly shows the impact of the fare change before and after.

- b. Calculate the expected percentage ridership change due to the fare increase.
 - c. Re-sketch your graph from (a) to also show the change in total fare revenue before and after the fare increase.
 - d. Will TriMet's total fare revenue increase or decrease after the change? How do you know (note: "the revenue looks bigger on the graph" is not sufficient 😊)?
 - e. Using the shortcut method, calculate the expected percentage change in total revenue for TriMet. Be sure to include the direction of the change.
 - f. Would you expect the long-run price elasticity of demand for public transit to be larger or smaller? Explain why.
 - g. Based on (f), briefly describe (no need for numbers, just in relative terms) how the long-run impacts of the fare change would compare to the short run impacts for: change in ridership and change in total revenue. Assume no changes to long-run transit demand.
3. Just as TriMet announces the fare increase from (2) above, the City of Portland announces they've partnered with an e-scooter provider to provide free scooter rides for everyone. Using the concept of related goods, choose one side of the debate and explain why and how the free scooters would likely alter the results from (2) in terms of short-run ridership and revenue impacts. Use at least one graph sketch, and be sure to frame your answer within the economic demand framework.
4. As pandemic restrictions ease and downtown Portland office workers begin returning to work in larger numbers, private parking lot owners will have to guess at what price drivers would be willing to pay. Explain with a graphical sketch and in words how price signals and market corrections would lead to a new equilibrium price, even if the owners guessed wrong initially. Assume the private market for downtown parking is competitive and does not exhibit returns to scale. Ignore the impact of public parking.