Post-Covid, Direct and Indirect Effects of Taylor Swift's Era's Tour on the US Economy

Kirati Bollineni

Abstract:

Live music contributes to economic growth from ticket sales, merchandise, and consumer and ancillary spending. Taylor Swift's Eras Tour is an example of this. It has become one of the highest-grossing tours in history, earning approximately $5.5 billion in the US. This paper argues that the Era's Tour created a long-term economic impact that could not be replicated in the future. The analysis projects the economic impact on metropolitan areas, considering both direct and indirect spending, and compares the Era's tour to other major tours, such as Beyoncé's Renaissance Tour. It also explores the role of post-pandemic demand and inflation in the Era's Tour's success.

Introduction:

Live music is a significant contributor to the national economy, generating approximately $132.6 billion in revenue each year (Oxford Economics, 2019). The most prominent artists today attract millions of people to their shows, which injects millions to billions of dollars into the economy. Taylor Swift's US leg of the tour included 52 shows in 20 venues across the country. Her presence increased revenue to many establishments in the cities she visited, notably benefiting the restaurant and hotel industries.

This paper investigates the economic impact of the Era's Tour and evaluates whether such a tour could be replicated under current and future economic conditions. This paper also examines how Swift's Tour impacted the employment industry, bringing recognition to Swift for boosting the economy and helping fans form a connection with economics. This topic is an interesting bridge between pop culture and traditional economics. Estimating the economic impact of Taylor Swift concerts has been studied before, often called " Swiftnomics." For avid fans, it's a way for them to become interested in economics and see how economics can be connected to their favorite artist. Understanding the effect of live music on the economy is not a new idea in the field of economics. (Krueger, 2004) examines ticket prices and how superstar musicians generate income through merchandise sales and album sales. As album sales have declined, top artists have become increasingly reliant on revenue from live performances. This shift highlights the significance of understanding the dynamics of the live concert market within today's music industry (Krueger, 2004). This study was conducted in 2004, but its impact has continued to grow today. Artists are more reliant on live shows since they generate a higher revenue than selling albums, vinyls, CDs, and streaming. Today's music industry has become dependent on live shows, which has led to higher ticket prices and a more concentrated market dominated by superstar artists. The live music economy continues to evolve, influenced by technological advancements and changing consumer preferences, making it an intriguing area for ongoing study. The Eras Tour's scale and impact were shaped by unique economic circumstances, including pent-up demand from the COVID-19 pandemic and inflationary pressures. This paper examines these factors, concluding that replicating the success of such a tour is unlikely.

Previous estimates of Swift's economic impact in the US include Anderson et al. (2023), which examines the revenue generated by Swift in Denver through ticket sales. A study from Fortune Magazine estimated that Swift's U.S. tour would generate $4.6 billion in total consumer spending. Chicago reported the city's highest-ever hotel occupancy rate for the weekend of Swift's Eras concerts in the city. In March 2023, Las Vegas' occupancy rate reached its highest level since February 2020 during Swift's concerts. This report offers insight into the live music economy following the pandemic and its evolution over time. This raises the question of whether Swift's success was due to the post-pandemic concert demand. Since people had not attended a concert in two years due to Covid-19, the demand for the Era's Tour was high, as it was the first major tour after the pandemic. If this were to happen two or three years from now, I suspect that the economic impact would be lower.

The hotel, dining,and travel industries have benefited from the tour, creating new job opportunities and positively impacting communities, including small businesses, even after Swift's departure. Below, I do not model this multiplier effect. Hence, the estimate below for the Era's Tour is likely to be lower than the actual economic impact.

By determining the number of people who attended the tour, estimating the total expenditure, and considering both direct and indirect effects, I will be able to calculate the economic contribution of Swift's Era tour. By doing this, I estimate whether another tour of this size is possible again.

Data and Methodology:

Table 1 - Summary Statistics of Data gathered

	Stadium Capacity	% Stadium used	Average Hotel Spend
mean	56816	90.5%	$323.50
std	5071	7.6%	$157.60
min	55000	76%	$138.00
max	73117	100%	$750.00
count	53	53	53

I compiled a list of all the cities in the US that Swift visited and found the stadium capacity, percent of the stadium booked, the total attendance, the average ticket price per show, the percentage traveling from afar, the amount of attendance from afar, the money spent traveling, the average hotel cost per night, the number of nights people spent in a hotel, the total amount spent on food, and the total amount of money spent on everything but the tickets. (Table 1) By finding this information, I was able to examine each city and determine the total number of people in attendance, and multiply that by the average ticket price of $1,088,56 (Economic Times, 2024). It is important to note that this is not the original sales price, but the resale price.The original average ticket price was $253.56 (Lind, 2023).

To calculate the total economic impact, I consider both direct costs, such as ticket prices, and indirect costs, including food, hotels, and travel. For this paper, I will be using the post-resale ticket price. I calculated the total ticket sales revenue by multiplying the number of people in attendance by the average (resale) ticket price, which was $1,088.56. I found the average travel cost by assuming that 50 percent of people were traveling from afar and the average price of a plane ticket is around $300. Average prices of hotels differed because the cost of a hotel depends on how far away you are from the stadium. The money spent on food was calculated assuming concert-goers would pay $50-$100 per meal, depending on the number of people attending. Assuming they spent $200 on lunch and dinner and $50 on breakfast the next day, the average amount would be $250. This number is also supported by Time Magazine, which suggests that people spent between $1,300 and $1,500 on traveling, hotel costs, and food. For example, in Glensdale, the average hotel cost was $400, and each person stayed 2 nights, totaling $1,350. I added the ticket price to the total cost of travel, hotel, and food for the attendees from afar, which accounted for half of the total attendance. Adding that together got me the total afar cost, and finally adding both parts of the equation(the ticket price and the afar cost) together for a total of 5.5 billion dollars. This total is in line with the US Travel Association and Time Magazine's estimate of $5 billion.

However, I expect this estimate to be lower than the actual effect because of the economic phenomenon known as the multiplier effect. The multiplier effect measures the impact that a change in economic activity—such as investment or spending—has on total economic output. This degree of amplification is known as the multiplier. The multiplier effect occurs when an initial injection of spending by fans purchasing tickets generates significant economic activity beyond the direct revenue. This spending flows to concert organizers, venue operators, and Taylor Swift, who pays employees and contractors. These recipients spend their earnings on goods and services such as dining, shopping, and transportation, thereby supporting additional jobs and income in secondary sectors. Moreover, concert attendees travel to the event's location and spend on hotels, food, and local attractions, further boosting the local economy (University of Maine, 2013). Although the multiplier effect is not explicitly shown in my paper, it exists to some degree, and I agree that my estimate is likely lower than the actual impact. The multiplier effect shows how the money generated from this tour instigated economic growth in the cities where Swift performed. This effect illustrates how initial spending of fans cascades through the economy, supporting jobs and income beyond direct beneficiaries.

The economic impact of the Era’s tour is significant and has been recognized by the Federal Reserve Board. The Board of Governors of the Federal Reserve, in their edition of the Beige Book published in July 2023: “Despite the slowing recovery in tourism in the region overall, one contact highlighted that May was the strongest month for hotel revenue in Philadelphia since the onset of the pandemic, in large part due to an influx of guests for the Taylor Swift concerts in the city.”. Many people don’t perceive live music as a significant contributor to the economy, but this shows that it can have a substantial impact. While it would take time for the tourism economy to revert to pre-pandemic numbers, the Era’s Tour began this trend and led to an uphill start.

In addition to calculating the economic impact, I created a model to illustrate how the employment numbers have increased due to the Era’s Tour, demonstrating that the tour indeed had a lasting impact on the cities. By using Python, I demonstrated how the treatment of the Era’s Tour affected employment in industries impacted by the tour, utilizing a

difference-in-differences model. A difference-in-differences method is a quasi-experimental approach that compares the changes in outcomes over time between a population enrolled in a program (the treatment group) and a population that is not (the comparison group). The model illustrates the upward trend in employment following Swift's visit to a specific city. Using the staggered timing of the Era's Tour on US cities, I estimate a simple difference-to-difference model as well as an event study. The model compares employment trends in host cities before and after the tour, controlling for broader economic trends.

Equation 1- Simple diff-to-diff

The difference between difference model is

$$Employees_{ct} = \alpha + \beta_1 Post_{ct} + \beta_2 Shows_c + \beta Post_{ct} \times Shows_c$$

Where $Employees_{ct}$ is the size of employees in the accommodation and food service industry, in t months per city (c), α is the intercept coefficient, *Post* is an indicator variable (0 or 1) for whether Swift had done her show in city (c) and month (t). *Shows*$_c$ take on a value (0, 1, 2, 3) depending on how many shows were in a select city. I computed the estimates of the coefficients in this equation, which are presented in the results section. (Figure 2)

Equation 2- Event Study

$$Employees_{ct} = \sum_{k=-7,\neq -1}^{12} \beta_k Swift_{ct,k} + \alpha_c + \alpha_t$$

I also estimated an event study model where $Employees_{ct}$ refers to the size of employees in t months per city, k shows how many months until or after the event, hence the -7. $Swift_{ct,k}$ shows when Swift was in a certain city (c) at time (t) and how many months ago it happened (k). Notice how β has a subscript, k, indicating how it is influenced by how many months ago it happened.

Results and Discussion

I was able to find that the Era's Tour added $ 5 billion to the US economy for the tour; this is a significant amount compared to Beyoncé's Renaissance Tour, which, according to The New York Times, contributed $4.5 billion to the American Economy. There is a difference in the number of shows performed in the US, with Taylor Swift performing 53 shows and Beyoncé performing 24. Beyonce's North American leg of her Renaissance Tour started July 12, 2023, in Philadelphia and ended September 2, 2023, in New Orleans. Swift's Tour took place around the same time, starting a bit earlier on March 17, 2023, and ending on August 9, 2023. However, while Taylor Swift did more shows, she visited fewer cities in the US. Beyoncé performed in 24 cities, while Swift performed in 20. During the summer of 2023, both artists took the US by storm, with their tours making a significant contribution to the economy. They had similar impacts, boosting local cities' economies and creating a multi-million-dollar economic boost.

The main difference between the two tours was that the Era's Tour had a larger reach, which created a bigger impact nationally and generated more income for the tourism industry. Swift had a larger impact on a broader region, as she spent more time in each city, which contributed to more pronounced economic implications. Beyoncé, on the other hand, went to more cities but only spent one night in each, so her impact was more concentrated and had a greater influence on the targeted regions. In Philadelphia, searches for hotels and travel spiked by 21%, shopping by 10%, restaurants by 30%, and beauty services by 9% during the week of July 6-12 (Beyoncé's Philadelphia tour was on July 12), versus the weekly average of searches in the previous year at the same time (Lawler, 2023). This shows that wherever she went, there was a pick-up in the tourism industry, and while it wasn't as pronounced as Swift's, it was still there.

Figure 1 (below) presents an event study showing employment growth in the accommodation and food services industries following Swift's concerts. The results highlight a sustained upward trend in employment, reflecting the tour's long-term impact. Cities hosting the Eras tour saw significant boosts in revenue and employment, particularly in the hospitality and transportation sectors.

The nature of the Era's Tour's economic impact was shaped by unique circumstances, including heightened demand for live events following the Covid-19 pandemic. Ticket price inflation further contributed to record-breaking revenues. These conditions created an economic environment unlikely to be replicated, making the Era's Tour a singular event in the history of live music.

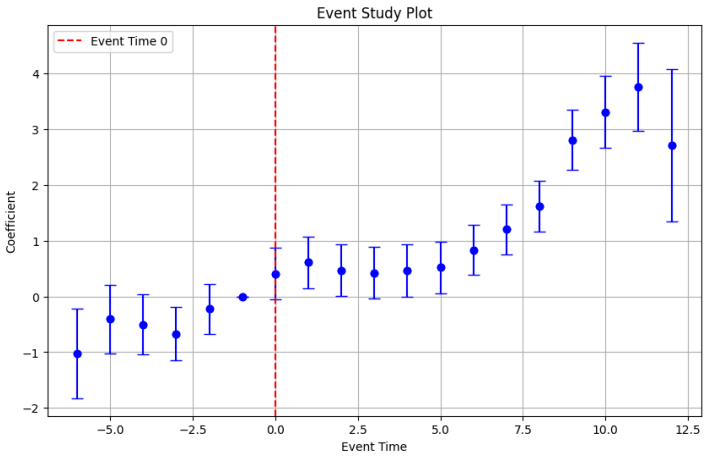

Figure 1: Event Study plot of the effect of Taylor Swift Era's concert on employment in accommodation, food and beverage

The model illustrates how the employment numbers began an upward trend following Swift's visit to a specific city.

	coefficie	STD Err	t	**P>|t|**	**[0.025**	**0.975]**

	nt					
const	109.9759	8.157	13.482	0	93.942	126.01
post_period	-255.7886	29.34	-8.718	0	-313.462	-198.115
number_shows	55.749	4.548	12.259	0	46.81	64.688
postxshows	91.7502	11.51	7.971	0	69.125	114.375

Figure 2: Difference-to-Difference table
This shows a summary of the values calculated through Equation 1 in a matrix format.

Conclusion

In this paper, I have demonstrated the impact of Swift's Eras US tour , estimated the effect it had on the number of employees in the hotel and food service industry, and speculated on whether another tour would occur on a similar scale. I believe a tour of this magnitude will not happen again due to numerous factors that would be missing for a tour five years from now. While Swift is a huge music icon, the Era's Tour generated an amount of money that was unheard of in recent times. She earned her spot at the top of the highest-grossing tours and created one of the greatest shows ever. However, many factors influenced the success of the Eras tour. The post-pandemic desire to attend a concert was one of the primary reasons this tour was so successful. Ticket price inflation is another reason, which I talked about earlier in the paper. The average price of a ticket rose significantly due to high demand and limited ticket supply. People spent over $1,000 to attend one or more shows, which helped stimulate the economy and pushed us back toward a pre-pandemic norm. Swift helped the travel and hospitality sector return to a normalcy that has not been seen since 2020. She has been recognized by numerous publications and the government for her contributions to stimulating the economy. While it is unlikely a show of this magnitude will happen again, we can all appreciate Swift for the impact she had on the US economy.

This paper demonstrated how I calculated the economic impact of the Era's Tour and suggested that it is a lower bound on the estimate due to the multiplier effect. I also used the difference to difference and event study models to show how employment in the US was affected by the Eras tour. In the future, I would like to explore past artists' tours, such as Taylor Swift's Reputation Stadium Tour from 2016, to understand the economic conditions that were different and create a model to predict if another tour of a similar size to the Eras Tour could happen again. While my prediction is no, it is challenging to predict what the future conditions will be like. By creating a model with components that can be adjusted, I can simulate how much money a tour would generate under various economic conditions.

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