Hail to the Chief: Assessing the Economic Impact of Presidential Inaugurations on the Washington, D.C. Local Economy

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Abstract

While presidential inaugurations routinely attract hundreds of thousands or more visitors to Washington, D.C. for the quadrennial celebration, our examination of employment from the Current Employment Statistics survey from 1939 to the present and both employment and unemployment from the Current Population Survey from 1977 to the present finds no noticeable effect on either variable from the event. The residents of D.C. should not expect the inauguration to make them any richer, and the city should not count on any economic benefits generated by the event to fully pay for the significant costs of hosting it.

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Introduction

Presidential inaugurations are among the largest national celebrations that regularly occur in the United States routinely attracting hundreds of thousands of spectators to Washington, D.C. and sparking a flurry of festivities for guests. While these quadrennial inaugurations allow the city to be an eyewitness to history in the making, this paper examines whether these events translate into increased economic activity for the city.

Without question, the presidential inauguration focuses national and international attention on Washington, and attracts thousands of spectators to the city. Since tickets are not required of those who line up to watch the inauguration parade or descend upon the National Mall, and since the number of spectators is not strictly controlled, any estimates of attendance at this type of event are subject to a great deal of uncertainty. With this caveat in mind, George W. Bush's 2005 inauguration attracted an estimated 300-400,000 attendees while Lyndon Johnson's inauguration in 1965 drew a then record 1.2 million spectators. (Drost, 2008) Barack Obama's 2009 inauguration is expected to top all previous events in terms of numbers with between 1.5 and 3 million people expected to be in attendance (Sheridan, 2008). But will these record numbers mean record economic impact for the region?

City planners and event organizers frequently tout mega-events as significant generators of income, employment, and tax revenues for the areas "lucky" enough to host them. Certainly many businesses expect a significant boost from the event. According to Kelly Groff, executive director of the Conference and Visitors Bureau of nearby Montgomery County, "Our hospitality industry always benefits from the inauguration... Montgomery County businesses will see a spike in sales. And Montgomery County will see increased room taxes at least for that month of

January, as room rates will be significantly higher than in the previous year." (Crisostomo, 2008) A typical *ex ante* economic impact report would also undoubtedly predict a massive windfall for the city and surround areas from the event. The number of attendees would be multiplied by an estimate of spending per visitor and then a multiplier would be applied to account for money recirculating through the economy well after January 20.

While this technique may make for a valid estimate of gross spending associated with the event, net spending may be significantly lower for a variety of reasons. Academic researchers cite *ex post* studies of cities, states, and countries that have hosted mega-events suggesting that these events typically generate lower economic impacts than anticipated. Studies of events as far flung as the Olympics (Baade and Matheson, 2002; 2008b; Jasmand and Maennig, 2007) and World Cup Baade and Matheson, 2004; Hagn and Maennig, 2007), post-season play in professional sports (Coates and Humphreys, 2002; Baade, Baumann, and Matheson, 2008a), and even National Political Conventions (Baade, Baumann, and Matheson, 2009) all find that mega-events usually result in insignificant changes in real economic variables.

Economists frequently cite three primary reasons why gross spending may diverge from net spending during large events. The first is the substitution effect. Spending on local events by current local residents causes these individuals to simply alter their spending patterns. The event causes consumers to substitute away from other goods in the local economy in favor of spending at the event, potentially resulting in a large gross impact but little increase in total economic activity. For example, the National Mall routinely welcomes large crowds for the annual Fourth of July fireworks display, but few economists would attribute a large economic impact to the show since most of the attendees are from the local Washington, D.C. metropolitan area and any

gains to Washington from the visitors are offset by losses elsewhere in the economy. Every person at the fireworks show is a person who is not out a restaurant, theater, or shopping mall. An event like the inauguration, however, is much less likely to suffer from the substitution effect since the event draws large numbers of people from outside the area who would otherwise not be spending money in the local D.C. economy.

A second source of divergence is the crowding out effect. Visitors to a mega-event may crowd out other economic activity. For example, during the 2008 Summer Olympics, security restrictions and other concerns "virtually eliminated any boost in tourism here from the Olympics," and the number of visitors to Beijing in August 2008, as predicted by its tourism bureau, was 450,000, or "about the same as last August." (MacLeod, 2008) Certainly during an inauguration, crowds, congestion, and security concerns will limit other economic activities in the area. Workers and other visitors will experience road closures, heightened security, and according to D.C. City Administrator Dan Tangherlini, the inaugural crowds may turn the entire city into one giant parking lot (National Public Radio, 2009). Such congestion certainly minimizes the other types of economic activity that can occur on that day. Similarly, news reports have noted that many individuals in the area have opted to rent out their own homes to accommodate guests. In many cases the home owners will then leave town during the inauguration. Therefore, while the city gains from any spending done by the visitors, any local spending by the home owners that would have taken place absent the inauguration should be subtracted from the estimates of net economic impact.

Finally, economies may experience heightened leakages during mega-events. While hotel room prices and occupancy rates in the city during the inauguration are likely to be significantly

higher than during a typical January, the wages paid to a hotel's desk clerks and room cleaners are unlikely to rise proportionately. Therefore the benefits of the event may accrue to hotel owners and shareholders outside the D.C. area rather than to the labor inside the city (Matheson, 2009). Similarly, mega-event place high demands on specialty services such as entertainment, catering, and security. If companies are brought in from outside the city to meet the increased demand then even though the spending may occur in the Washington area, the income is actually earned by companies and individuals from outside the local area.

Data and Model

In order to estimate the economic impact of Presidential Inaugurations on the Washington, D.C. economy, this paper will examine employment and unemployment rates in the city conditioned on national and regional economic trends as well as seasonality. Although a more direct measure of economic impact such as personal income would be preferable, most income account data are available at the city level at only annual intervals, and identifying the effect of a single day event on a large, diverse metropolitan economy using annual data may be akin to searching for the proverbial needle in a haystack. Employment data at the city and metropolitan area level is available at a monthly frequency and covers a sufficient duration to allow for the analysis of multiple inaugurations. This paper analyzes monthly employment data from the Current Employment Statistics (CES) survey from January 1939 through October 2008 and both employment and unemployment data from the Current Population Survey (CPS) from January 1976 through October 2008. Both time series include all available data for the District of

Columbia. National and regional data on employment and unemployment will also be utilized as controls and summary statistics on the data are shown in Table 1.

In order to examine the impact of the inauguration on employment and unemployment in the city, we use intervention analysis on an ARIMA model as outlined in Box and Tiao (1975). Intervention analysis provides a formal test for the change in the mean of a series as a result of an exogenous shock at a specific point in time.

The general intervention ARIMA(P,D,Q) model for the data is

$$z_t^* = \beta_0 + \sum_{p=1}^{P} \Phi_p z_{t-p}^* + \sum_{n=2005}^{2008} \Lambda_n y_n + \sum_{q=1}^{Q} \Theta_q \varepsilon_{t-q}^* + \sum_{m=1}^{12} \alpha_m MS_m + \beta_1 Inauguration_t + \varepsilon_t^*,$$

where z_t^* is the first-differenced labor variable in time period *t*, P is the number of lagged values of z_t^* in the model known as the autoregressive (AR) dimension of the model, ε_t is an error term, Q is the number of lagged values of the error term representing the moving average (MA) dimension of the model, and $Inauguration_t$ is a dummy variable taking a value of 1 every four years during Januarys of inaugurations and 0 otherwise. D is the number of times z_t is differenced to create z_t^*. The model also includes a vector of monthly dummy variables (MS_m) to account for seasonality in the data. The seasonal dummy variable for December is omitted in the model to avoid over-identification.

Because the arrival data are non-stationary, we use the first difference of labor variables in our estimations. Augmented Dickey-Fuller and Phillips-Perron tests reject the existence of a unit root for the first differenced data. The autoregressive and moving average dimensions of the models are determined through trial and error testing. Only the optimal autoregressive and moving average structures, as determined by the Akaike Information Criterion, are presented in

the results. Estimations performed on undifferenced data, which we do not report here, returned similar results, which suggests that the data are not "over-differenced."

Table 2 presents the model for employment both in the CES and CPS and for unemployment. The monthly dummies are included in the model, but omitted in the results for brevity. An examination of the coefficients on the *inauguration* variable finds that the variable is far from statistically significant, and indeed in two of the three models, the coefficient is of the "wrong" sign. In the two models utilizing CPS data, the inauguration appears to reduce employment and increase unemployment in Washington, D.C. although again these results are not statistically significant.

Although care must be taken in ascribing values to coefficients that are not statistically significant, even a generous interpretation of the results suggests that inauguration has limited effects on the labor markets in the District of Columbia. The model utilizing CES data suggests that employment increases by a mere 394 jobs during inaugurations, or an employment increase of less than one-tenth of one percent. Of course, combined with the CPS results suggesting a fall in employment and a rise in unemployment, there is little reason to believe that inaugurations regularly have any significant positive economic impact on the D.C. area. These results viewed with some caution, however, as the available data cannot measure either wages or hours worked. In addition, these measures of labor force participation examine only the overall labor market. It is quite possible that a mega-event could positively affect some industries (such as lodging and restaurants) while harming others (such as general merchandise) while leaving total economic activity unchanged as noted by Baade, Baumann, and Matheson (2008b). Overall, however, the

results of this paper are in line with other *ex post* studies of the true economic impact of mega-events on host cities.

Conclusion

While presidential inaugurations routinely attract hundreds of thousands of visitors to Washington, D.C., and may bring over one million guests into the city, for the quadrennial celebration, our examination of employment and unemployment over the past seventy and forty years, respectively, finds no noticeable effect on either variable from the event. The residents of D.C. should not expect the inauguration to make them any richer, and the city should not count on any economic benefits generated by the event to fully pay for the significant costs of hosting it.

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Table 1: Descriptive Statistics

	Levels (thousands)				12-month difference (thousands)			
Variable	Mean	Median	st. dev.	N	Mean	Median	st. dev.	N
DC Employment from CES	576.39	580.75	79.68	838	5.39	5.35	18.99	826
US Employment from CES	80,911.8	76,743	32,462.1	838	1,554.6	1,818.0	1,672.2	826
US Employment from CPS	96,444.0	95,843.5	28,672.6	730	2,397.1	1,690.5	7,369.0	730
US Unemployment from CPS	5,820.1	6,104.5	2,410.5	730	137.49	-107.5	1,070.5	730
Mid-Atlantic Employment from CPS	17,355.6	17,491.9	1,398.4	394	151.74	158.59	234.35	382
Mid-Atlantic Unemployment from CPS	1,166.0	1,157.2	244.6	394	-15.42	-45.85	167.03	382
DC Employment from CPS	292.27	293.32	14.08	394	0.14	0.53	8.93	382
DC Unemployment from CPS	23.58	23.32	4.77	394	-0.3	-0.51	3.23	382

Table 2: ARIMA Results

	Current Employment Statistics (1/39 to 10/08)	Current Population Survey – Employment (1/76 to 10/08)	Current Population Survey – Unemployment (1/76 to 10/08)
inauguration	0.3936 (5.5155)	-0.1904 (0.5488)	0.6114 (0.4053)
national employment	-0.00063 (0.00109)	0.0009** (0.0004)	
mid-Atlantic employment		0.0055** (0.0024)	
national unemployment			0.0011** (0.0005)
mid-Atlantic unemployment			0.0038 (0.0030)
constant	0.5787 (7.8433)	6.2580 (9.0049)	-0.7682 (2.2574)
AR(1)		0.2527** (0.1135)	0.9874*** (0.0081)
AR(2)		0.9045*** (0.0866)	
AR(3)		-0.1809*** (0.0566)	
MA(1)	0.9435*** (0.0134)	0.8633*** (0.1075)	-0.5768*** (0.0546)
MA(2)			0.1193* (0.0646)
MA(3)			0.0877 (0.0578)

Notes:

(1) Coefficient reported. Standard errors in parentheses.

(2) *,**, and *** indicate the estimate is statistical significant at the 10%, 5%, and 1% level, respecitively.

(3) All data and therefore marginal effects are in thousands.