**Does the party of a city’s mayor have a significant effect on a city’s economic performance?**

**Abstract**

This paper will attempt to discern the effect of a change in political affiliation of a city’s mayor on economic stability and development across various cities and metropolitan statistical areas in the United States over the past thirty years. I gathered data on the mayoral history and economic indicators such as unemployment rate, real GDP, and population and ran a difference-in-difference specification with various controls in order to isolate the effect of a dummy variable intended to represent a change from Republican leadership to Democratic leadership. After running the analysis, I found no significant differences in cities/metropolitan statistical areas that changed leadership and those that did not. However, my study was limited by a lack of information and small sample size, and further studies could replicate my investigation in a more rigorous and thorough manner.

**Section I: Introduction**

Over the past thirty years, the political sphere in the United States has become increasingly controversial, polarized, and publicized. Since the 1990s, the country has experienced events such as the Gulf War, the September 11 attacks and aftermath, the mass shootings in Las Vegas and Orlando, and more. The government’s reactions to these events proved increasingly divisive, casting a deep wedge between supporters of the country’s two main political parties, the Democratic Party and the Republican Party. The election and regimes of contentious political leaders such as Bill Clinton and Donald Trump have only furthered the divide and left the country extremely fractured.

In the same period, the economic situation of the United States has followed a convoluted and everchanging trajectory. The economy prospered in the 1990s as new trade opportunities arose across the globe and a nascent technological revolution optimized the work of countless companies across the country. However, the start of the 21st century brought tumult to the nation at large with the terrorist attacks in New York and the wars in the Middle East that followed. The latter part of the 2010s brought a huge economic collapse that would come to be known as the Great Recession (U.S. Department of State). It took many years to recover from this crisis and begin a resurgence, and now in 2020, we are facing another event of great magnitude due to the COVID-19 virus.

Thus, as a university student who has matured throughout and into this period of political polarization and economic instability, I decided to investigate these two phenomena through a narrower lens. In an attempt to investigate the economic impact of differing political ideologies on a more localized level, I studied the economic performance of various cities and metropolitan statistical areas (MSAs) throughout the United States under mayors who identified as Republicans and Democrats in an attempt to discern a significant difference in outcomes between regimes of leaders associated with different parties. In doing so, I hoped to come to a more definitive conclusion regarding each ideology’s influence on a more tangible and personal level.

In order to run my investigation, I gathered time-series mayoral data for my areas of study and information about GDP and unemployment for the same locales. I then ran a difference-in-difference regression with additional controls for other economic patterns, year-level fixed effects and location-level fixed effects. The coefficient of interest was associated with a dummy variable describing the political party of an area’s mayor at a given time. After running multiple specifications with and without controls, I found that the political party of an area’s mayor does not have a significant effect on per-capita GDP growth or unemployment rate. Additionally, the controls also proved insignificant in predicting the response variables. The rest of the paper will be organized as such: Section II will provide some background on existing works related to my study and give some context to my own research procedure, and the following section will spend some time discussing the data sources and collection methods. Section IV will further detail my empirical strategy, and Section V will discuss some results that came from that strategy. The last section of the paper will draw some conclusions from my findings and propose some thoughts on further investigation into my topic.

**Section II: Background/Context**

First, I will describe some prior work related to my own research question. Arnold Fleischmann, Gary Green, and Tsz Man Kwong investigated a similar relationship in a paper published in 1992, although they looked it at from the opposite perspective. Instead of attempting to use regimes to predict economic outcomes, they used economic characteristics of the population of different towns to predict the adoption of various policies in said towns. This study was run on US cities with a population between 10,000 and 250,000, and 1,126 cities were included in their sample. Their dependent variable was constructed by sending surveys to city managers and chief administrative officers and asking them which of a specified list of sixty-four tactics their city had implemented. These responses were then aggregated by specifying a dummy variable with a 1 if the policy had been implemented and a 0 if it hadn’t, and then adding the dummies together to create a score between 0 to 64. A second calculation was done to attempt to describe the extent to which each city implemented those measures. The independent variables related to economic and demographic characteristics of the city and its citizens, such as unemployment, population size, and debt and tax revenue. They then ran an OLS regression of the overall development index on sixteen of these independent variables. They also ran a factor analysis of the different strategies they posed in their surveys to isolate the most common practices and ran individual regressions for each of the nine resulting strategies on the same independent variables as before. To discuss a few of their findings, they concluded that nonmetropolitan communities and central cities, as opposed to suburban areas, generally adopt more economic policies. The presence of a city government as the main agent pushing economic development was deemed to be positively related to the adoption of policies, which could reinforce the idea that my question is one that may draw some insight. Their factor analysis established nine common development strategies implemented by cities during this time, including aesthetic improvements, revitalization projects, and activities to attract or retain business activity. Regional competition stood out as an important explanatory variable in adopting these policies (Fleischmann et al, 1992).

In 2011, Stephen Coate and Brian Knight published a paper on the two main structures of municipal government in the US: council-manager and mayor-council. They also investigated the differences between these two structures in various environments cities across the country. Their methodology revolved around formulating different propositions regarding the two types of government, creating test statistics to test these propositions, and then making conclusions based on the results of these tests. They found that expected public spending would be lower under the mayor-council system. However, they also implied that either system could be feasibly chosen by voters in a referendum. Thus, perhaps the mayor-council system is a more efficient manner to push progress forward in municipalities in the US while also satisfying the general public in any general environment (Coate et al, 2011).

My paper comes several years later than either of these studies in a different political and economic context. Quite frankly, I expected a higher number of papers covering the effect of political regimes at a local level, especially in this era of polarization established above. As I’ll detail below, the lack of reliable data at this narrower bureaucratic scope presented some difficulties for my work, but I still believed it an important pursuit to shed some light on the potential differences in outcomes stemming from both sides of this divide.

**Section III: Data**

In order to complete my study, I needed to gather data on local economic outcomes, mayoral history, and relevant characteristics that may affect the targeted relationship. I first obtained the statistics on outcomes and relied on available numbers to construct my sample of cities and MSAs. I knew that I wanted to look at some form of GDP; it is widely regarded as the foremost indicator of an economy’s welfare and progress. I could not find city-level GDP data; however, the U.S. Bureau of Economic Analysis provides GDP data from 2001 to 2018 in thousands of chained 2011 dollars for metropolitan statistical areas in the U.S. Census.gov defines a metropolitan statistical area as “that of a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core”. Numerically, a metropolitan statistical area must have at least one urbanized area of 50,000 or more inhabitants (U.S. Census). However, these criteria involves the inclusion of several different cities, and thus, several different mayors inside one MSA; thus, I was forced to adjust for this in my regression. However, I was able to acquire city-level unemployment data for the period from 1990 to 2020 from the Bureau of Labor Statistics; utilizing unemployment allowed me to investigate at a lower level with more accurate party data and higher party impact.

Although finding the outcome data was relatively straightforward, compiling mayoral data proved a significantly harder task. I initially anticipated the existence of a consolidated and comprehensive source on mayoral history for some sections of the U.S, but I could not find anything resembling this idea. I did locate one hub of publicly compiled information on world leaders, including American mayors, at worldstatesmen.org. This website includes the history of U.S. mayors and their political affiliations in 87 different cities across the United States. I attempted to verify its information with other sources, and it appears accurate to me, but the reliability of the data is not completely proven, and the dataset tends to contain larger, more relevant cities, which could be a source of bias. In order to minimize that bias, I also attempted to randomly sample cities and MSAs from my outcome datasets and manually compile mayoral data on this sample. However, between these various sources and samples, I needed to ensure there was some variation in mayoral political affiliation during my period of study from 1990 to 2020; thus, my sample of study was further restricted by patterns of long-term party dominance in some parts of the country. The first regression employing GDP data was run on 703 data points from 43 MSAs, and the second regression employing unemployment data was run on 1,810 data points from 63 cities, with each data point representing the party of a given area’s mayor on a given year.

In order to formulate a more accurate comparison across MSAs, I decided to convert the GDP data into per-capita GDP growth by dividing the GDP data by the MSA population data and applying a simple growth rate formula. The coefficient of interest is attached to the Democ dummy variable. This dummy takes a value ranging from 0 to 1. For an MSA with a Republican mayor in a given year, the value of the dummy variable would be 0; meanwhile, for an MSA with a Democratic mayor, the dummy would be 1. For MSAs with multiple cities led by mayors of different parties, I took the number of Democratic mayors and divided it by the number of cities; for example, for the MSA containing Albany-Schenectady-Troy in New York in the year 2000, Albany and Troy were represented by Democratic mayors while Schenectady was represented by a Republican mayor. Thus, the value of the dummy for this MSA in 2000 would be 2/3. I also gathered data population for MSAs and population for individual cities from the U.S. Bureau of Economic Analysis and census.gov respectively to control for other factors. Tables 1 and 2 below shows summary statistics for each separate regression.

Table 1: First Regression

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | Mean | Std Dev | Min | Max | N |
| %ΔGDP/cap | .8460191 | 2.7347 | -12.59162 | 10.86747 | 703 |
| Democ | .6232812 | .4601637 | 0 | 1 | 703 |
| Lagged GDP/cap | 47301.81 | 8987.33 | 29016.66 | 78038.33 | 703 |

Table 2: Second Regression

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable | Mean | Std Dev | Min | Max | N |
| Unemployment Rate | 6.395918 | 2.764084 | 1.1 | 19.7 | 1,810 |
| Democ | .5911602 | .4917554 | 0 | 1 | 1,810 |
| Population | 511525.8 | 1114425 | 32252 | 8475976 | 1,197 |

**Section IV: Empirical Strategy**

As stated earlier, I utilized a difference-in-difference specification in order to isolate the impact of the mayoral party on economic outcomes. My two regression equations are defined as:

In the first equation, %ΔGDP/cap refers to percent change in GDP per capita for each MSA. αi and μt refer to year fixed effects and MSA-level fixed effects respectively. β refers to the coefficient of interest on the Democ dummy variable. ωi,t-1 refers to the one-period lagged GDP per capita of a given MSA. In the subsequent equation, Unemployment refers to a city’s unemployment rate while αi and μt still represent controls for fixed effects. φi,t informs on the population of a given city at a given time. εi,t refers to an error term in both equations. The significant benefit of running a DID regression is that it naturally controls for all time-invariant characteristics of our sample. However, some potential sources of bias exist through time-variant attributes of each city or MSA in the sample that may affect economic outcomes independently of mayoral party. I attempted to control for some of these by including controls for population and real GDP in the first equation and population in the second equation. Still, it may have been better to include controls for income and GDP in the second specification, but the data was unavailable. Also, there may be some possibility of reverse-causality; when GDP growth is flagging, it may cause certain cities to tend towards the election of one party to power. However, I believe I have a wide enough sample of different cities with different makeups to minimize that.

**Section V: Results**

After running the regressions for both phases on my analyses, I received the following results. As stated above, each regression also includes year and area-level dummy variables, but these coefficients are not reported in the following tables.

Table 3 – MSA GDP Analysis

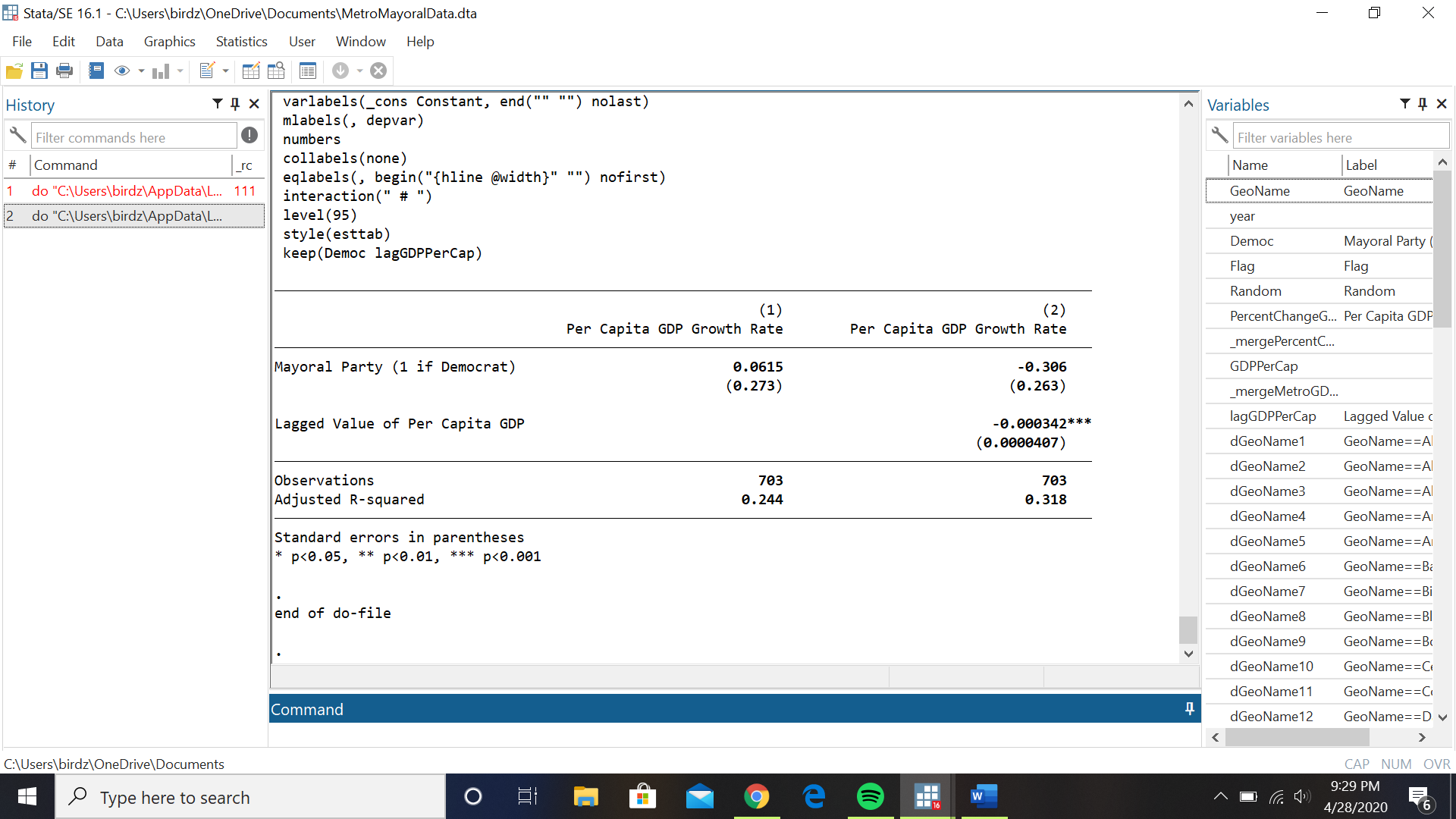


Table 4 – City Unemployment Analysis



To start with Table 3, we can see that the first regression, which does not control for lagged per capita GDP, returns an insignificant coefficient of .0615. This would imply that the average percent change of GDP per capita for MSAs completed represented by Democratic mayors is about .06 % higher than the average percent change of GDP per capita for MSAs completely represented by Republican mayors. Considering the average percent change is .84%, this is not economically significant, and it is proven not statistically significant at any alpha level below .1 by a t-test. The second regression in this section includes a control for lagged GDP per capita in the first period in order to attempt to diminish the effect of different MSAs naturally having more resources to work with. This regression produces a coefficient on the Democ dummy of -.306, meaning that the average percent change of GDP per capita was actually lower for MSAs with every city represented by a Democratic mayor compared to MSAs with every city represented by a Republican mayor. This coefficient is slightly more statistically significant, but still not significant at a stringent level. The control’s effect is statistically significant, and the coefficient of determination is slightly higher on the second regression, showing that it may be a better representation of the relationship than the first. However, the magnitude of the effect of lagged GDP per capita is very low. All in all, these results imply that there is a negligible effect of mayoral party on GDP progress for metropolitan statistical areas in the United States.

The second analysis focused on city unemployment rates. The first regression was a simple difference-in-difference specification with year and city-level fixed effects. The coefficient on the Democ dummy is .256, and it is statistically significant at the .001 alpha level. This would mean that, for cities with a Democratic mayor, the average unemployment rate is .256% higher than that of cities with a Republican mayor. Referring to Table 1, the average unemployment rate in my dataset is 6.4% with a standard deviation of about 2.76%; thus, it seems that, although statistically significant, the effect of mayoral party is not very economically significant. Adding a control for the city’s population to involve the potential effect of more job scarcity in higher-population areas hurts the overall analysis. The coefficient on the Democ dummy becomes statistically insignificant, and the coefficient on the control variable, although statistically significant at the .05 alpha level, is miniscule. Thus, although it appears that mayoral party could be statistically relevant to unemployment rate, it does not have a very powerful or actionable effect.

**Section VI: Discussion**

Thus, from my analysis, we can conclude that differences in party affiliation of mayors in cities across the United States do not have a very significant impact in economic stability or development as measured by GDP per capita and unemployment rate. The most noteworthy conclusion we can make is that unemployment is higher by a quarter of a percent on average for cities led by a Democrat, which could be important, depending on the magnitude that one is looking at. I can think of a few reasons that could potentially explain my results. It is quite possible that it takes mayors a little bit of time to implement their policies and see a significant effect on city/MSA indicators, effects which may not be accounted for in my analyses. It is also possible that the mayor simply doesn’t have much legislative pull in cities in the United States, acting as more of a figurehead or leader to rally around. I also believe that my limited sample size, especially in the GDP analysis, could cast some doubt on my results; the unemployment analysis had a significantly higher number of observations utilized, and it gave me more accurate conclusions.

I definitely believe there are some ways that my study could be improved. First, I ran into some serious difficulty compiling the data to be used in the analyses. Some of the mayoral data was extracted from sources which, although appearing reliable, had no real backing or credibility behind them. There also existed a general dearth of data on mayoral history for cities in general. Also, it was difficult to find city-level or MSA-level economic data to expand my analysis or make it more rigorous. Some of the data available was also highly correlated; for instance, the Bureau of Economic Analysis displayed data on income and GDP. Thus, it is possible a government official with more access to lower-level, reliable government data could replicate my analysis with a larger sample size and more statistically thorough empirical methods. Unfortunately, I do not believe my results are extremely generalizable. The dominant political parties differ greatly across the world and across time, and even the identity of the parties studied in this analysis is changing constantly along the years. However, my intention with this study was more to investigate a specific question in a specific time period, so I am not particularly disappointed by this fact, as generalizability was not a significant component of my interest or aims.

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