



Presidents and the US Economy from 1949 to 2016

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Does the US economy perform better when the president of the United States is a Democrat or a Republican? This paper explores the economic growth rate during different presidencies using data from 1949 to 2016, and confirms the Democratic-Republican gap while also showing the gap depends entirely on an unrealistic lag structure. The gap disappears and loses significance when lags of four, three, or even two quarters are considered, which is what history and political science recommend is appropriate given the lag between political actions and economic consequences. A superior method of overlapping presidential responsibility for transition periods is presented.

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Three months after President Andrew Jackson left the White House, the Panic of 1837 began, a five-year recession that consumed the presidency of Martin Van Buren. Van Buren was certainly not the last resident of the Oval Office to inherit the economic consequences of a predecessor. More recently, President Donald Trump declared during his first White House press conference, “To be honest, I inherited a mess.” Barack Obama famously inherited a recession stemming from the late 2008 financial crisis. Likewise, Jimmy Carter and Gerald Ford wrestled with inflation during their presidential terms in the late 1970s, even though the underlying forces were set loose by expansionary fiscal and monetary policies of the 1960s and early 1970s.

To fairly assess and compare the economic performance of presidents, it is arguably necessary to lag economic measures. A recent paper by Alan Blinder and Mark Watson (2016) measure the partisan difference among recent presidents, but support for their thesis is totally dependent on the lag structure.² The Blinder-Watson (BW) paper’s central thesis is simple: “The U.S. economy performs much better when a Democrat is president than when a Republican is.” BW’s proof of a statistically and economically significant Democratic-Republican performance gap (henceforth the D-R gap) is based on empirical data from 1949-2012, covering sixteen presidential terms – Harry S. Truman’s second term from 1949-1952 to Barack Obama’s first term from 2009-2012 – which reveal an unmistakable advantage when a Democrat is president. However, these numbers are sensitive to what the definition of “is” is. Is a term the sixteen quarters from January of one inaugural address to the January four years later? For Blinder and Watson, the answer is no. Instead, they use a lag term that maximized the D-R gap’s size and significance, saying in a footnote that other lags would “mask” their finding.

² See <https://www.aeaweb.org/articles?id=10.1257/aer.20140913> for Blinder-Watson paper and data.

BW address objections that one might instinctively raise to the thesis with econometric tests that affirm the robust correlation of quarterly GDP growth and a dummy variable for presidential party. They explore dozens of other indicators such as annualized real GDP *per capita* growth (1.73 percentage points higher when a Democrat is president), unemployment (0.4 percentage points lower), and payroll growth (1.4 percentage points higher). They consider other explanatory variables and rule them out, including other presidential traits and majority party in both houses of Congress. They also consider initial conditions, which seem to favor Republicans.

Yet the lag between presidential action and economic impact is hardly addressed at all. Why does BW lag the presidential term by one quarter, instead of none? Why not two, four, or six? In this paper, section I shows that the D-R gap does not hold across longer lags. Section II discusses whether economic presidential terms should be judged as discrete periods or instead by overlapping the responsibility of current and former presidents during the initial year(s) or quarter(s) of a new term. Section III concludes.

I. Lags

Using the same Bureau of Economic Analysis data that Blinder-Watson used, updated through the 4th quarter of 2016, I found a D-R gap in GDP per capita of 1.17 percentage points. The average GDP growth rate during the 144 quarters when a Republican was president is 2.68, compared to the average of 3.85 over the 128 quarters when a Democrat was president. Why is my D-R gap two-thirds the size of Blinder-Watson? Partly because the second Obama term is included, but partly it is because Blinder-Watson define a presidential term using a one quarter lag.

Blinder and Watson mention their lag assumption very briefly in a single paragraph on the third page of their paper as follows:

"The estimated D-R growth gap is sensitive to the presumed lag between a presidential election and any possible effects of the newly elected president on the economy. In our main results, the first quarter of each president's term is attributed to the previous president. While we focused on this one-quarter lag on a priori grounds, we repeated the calculation with lags of four, three, two, zero, and leads of one through four quarters. Results were similar, although these alternative lags all lead to smaller estimated D-R gaps."

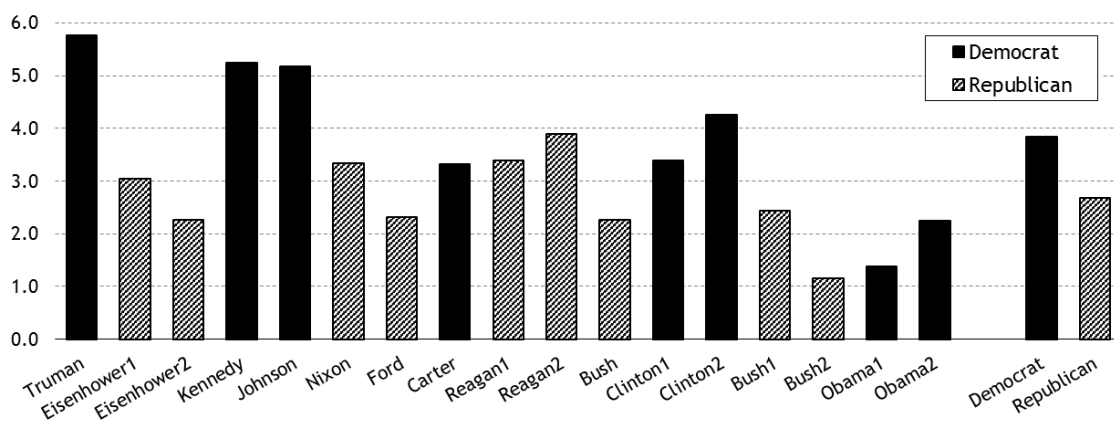
The footnote to the paragraph above says:

"See online Appendix Table A.2. Political scientists seem to prefer lags of one year or more (see Bartels 2008, Comiskey and Marsh 2012.) Such lags struck us as too long on a priori grounds. Furthermore, as will be shown later, much of the partisan growth gap comes in the first year of each presidency. So a four-, five-, or six-quarter lag *would mask most of it.*" (emphasis added)

The explanation does not adequately explain why a one-quarter lag is used. The online appendix to the BW paper will be neglected by the vast majority of readers, but it certainly does not show that "results were similar" using alternative lags. Instead, the appendix offers a table showing the D-R gap is lower when presidential terms are unlagged, and far lower when lagged by four quarters. However, the appendix provides no theoretical justification, historical discussion, or outside citations to explain their choice of a one quarter lag. So we are left to wonder: what do they mean by a priori grounds? Oddly, the BW appendix table reveals that *statistical significance* falls dramatically outside of one quarter, and collapses beyond three quarters. Their lone footnote defense is that using anything other than a one quarter lag would "mask" their thesis. It is unclear what BW mean by "mask" but the term seems to indicate the thesis is simply not robust, and perhaps spurious.

Figure 1 shows the average growth rate of unlagged presidential terms. Note that I define the Kennedy, Johnson, Nixon and Ford terms during the time period when each man was in office, not by 16 quarters. So the Kennedy and Ford terms are shorter in duration, whereas the Nixon term includes many quarters after his re-election, and the Johnson term includes the four quarters of 1964 after Kennedy's assassination.

Figure 1. Average annualized GDP growth



Let's consider again what the a priori, or natural, assumption should be regarding when Presidents are most influential over the economy. In 2009, it was often said that President Obama had inherited a recession from President Bush. And in 2001, it was often said that President Bush had inherited a recession from President Clinton. Indeed, recent presidents have an unfortunate tendency to enter the White House as economic storm clouds are gathering through no fault of their own. Obama was sworn in on January 20, 2009, a year into a recession that continued for the next two quarters. The 2001 recession, dated by NBER from March to November of that year, began during Bush's second full month in office. Likewise, Ronald Reagan was elected in late 1980 and entered the White House in January of 1981, six months before the famous double-dip recession that began in July.

The notion of inheriting old policies and their consequences is a common storyline when Presidents are first sworn into office, as is skepticism about how quickly politicians can change the economy. For example:

[E]conomists say it will take time before the U.S. reaps any benefits. Most predict the economy will grow around 2% or a bit faster in 2017. If Trump's approach works, the payoff is unlikely to come until the end of the year or early 2018, they say. (Bartash 2017)

A recent debate among political scientists Bartels (2008), Campbell (2011, 2012), and Comiskey and Marsh (2012) on this topic found agreement that the lag should be one year or longer based on the historical facts. Comiskey and Marsh (2012) write: “We agree with Campbell and Bartels that presidents cannot normally be expected to influence the economy in their first year in office. For six of the 11 presidencies from 1949 to 2009, no major new fiscal policy initiatives were enacted in their first six months in office.”

A counterargument that election results seem to effect the stock market is not tested here, but neither is it directly relevant to the central concern which is GDP growth. I have found no evidence of anyone suggesting elections have any near-term effect on GDP or other macroeconomic indicators. Nor do Blinder and Watson cite anything along that line.

Bartels (2008) describes two types of lags. First, there is an “enactment” lag between an agenda and policy becoming law. Second, there is an “effectiveness” lag between policy action and consequences in the economy. In fact, lags are often encoded into the law to be phased in over time, such as tax changes and higher minimum wages, but even when changes are made

immediately (such as a shift in monetary policy that adjusts the target interest rate), the effects on the economy take years to play out.

Let's consider a few cases. Barack Obama's two major economic policy initiatives in 2009 were a major fiscal stimulus package and health care reform. The American Recovery and Reinvestment Act of 2009 (ARRA), commonly referred to as "The Stimulus," was budgeted at \$787 billion, enacted by the United States Congress and signed into law on February 17, 2009, less than a month into Obama's first term. That meets the Blinder-Watson framework on fast implementation, but the effectiveness lag was far longer. Roughly a third of the Act (\$288 billion) involved tax incentives, and the timing of their impact was widely dispersed over many years by design. Other provisions involved spending on health care (\$155b), education (\$100b), infrastructure (\$105b), and low-income assistance (\$82b). In every case, expenditures took lengthy and uncertain durations to make an impact, and even when they did affect GDP, the impact was neither immediate nor necessarily positive. During the mid-term election campaign in October 2010, Obama even joked in an interview with the *New York Times* that many of the jobs his administration promised during the ARRA debate were not as "shovel ready" as he was led to believe.³ Infrastructure, as Obama later realized, involved lengthy permitting and contracting hurdles. Work incentives were affected by extending unemployment insurance benefits from the norm of 26 weeks to 99 weeks, double the emergency duration of previous recessionary extensions. By design, the impact of this provision was estimated by White House economists to raise the unemployment slightly, an effect that would endure at least eight quarters after enactment.

In sum, what was the net impact lag on the ARRA? No less than two years.

³ "Education of a President," Peter Baker, October 12, 2010, *New York Times Magazine*.

On March 23, 2010, President Obama signed the Affordable Care Act (ACA) into law, which was almost exactly 14 months after being sworn into office. Yet the timing of the law was very complicated, again this was by design. Most provisions were designed to be phased in starting in 2014 with a phase-in period lasting until 2020. Some benefits kicked in immediately, but their full costs were deferred for budgetary reasons. One of the signature pieces of the law was the creation of state-based exchanges for individual (non-employer) plans, scheduled to open on October 1, 2013 – *three quarters into the next presidential term*. Even so, Healthcare.gov launched as scheduled in late 2013, but with serious technical problems which led to confusion and further delays. Whoever was president in the 2013-2017 term, handling the ACA through perfect implementation or immediate repeal was rife with impact lags. The consequences were surely inherited from the first Obama term. The ACA is symbolic of the long lag between enactment and effectiveness of major legislation, regardless if that impact is positive or negative.

In sum, what was the net implementation and impact lag of the ACA? No less than four years.

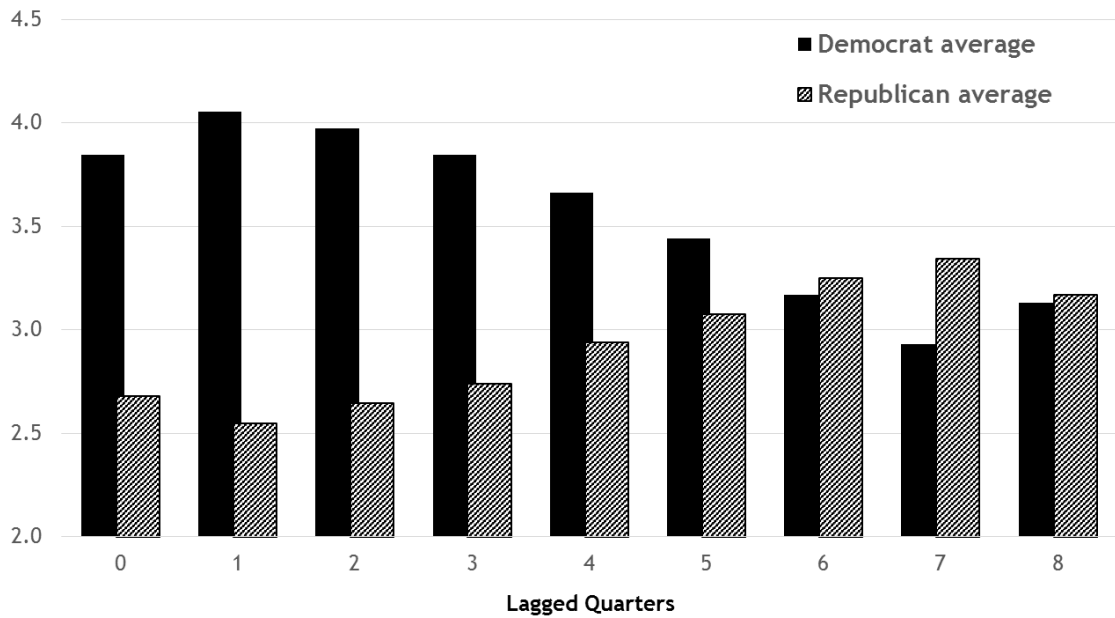
Perhaps the most interesting case of a structural policy lag is the Carter presidency, notably the energy reforms and deregulations that, with a lag of years, are credited today with lowering the cost of oil during the 1980s, years after Carter had lost re-election. Carter's deregulation of the airlines and communications industry also led directly to long-term revolutions in transportation and personal computers and the productivity boom of the 1980s and 1990s. But the Blinder-Watson thesis cannot appreciate that kind of long-term impact.

Blinder and Watson support their thesis using econometric tests that lag the presidential party dummy by one quarter. Again: why one quarter? It is justified by the authors using the briefest of hand waives, a three-word phrase – “a priori grounds” – which is Latin for reasoning based on theoretical deduction

rather than empirical observation. Oddly, the only reference to theory is footnote 5 which admits that “Political scientists seem to prefer lags of one year or more.”

Interestingly, the D-R gap peaks with a one quarter lag. After that, the D-R gap declines quickly with each lag, shown here in figure 2. It even flips to the Republican favor at six lagged quarters.

Figure 2. Average GDP growth rates over different lags

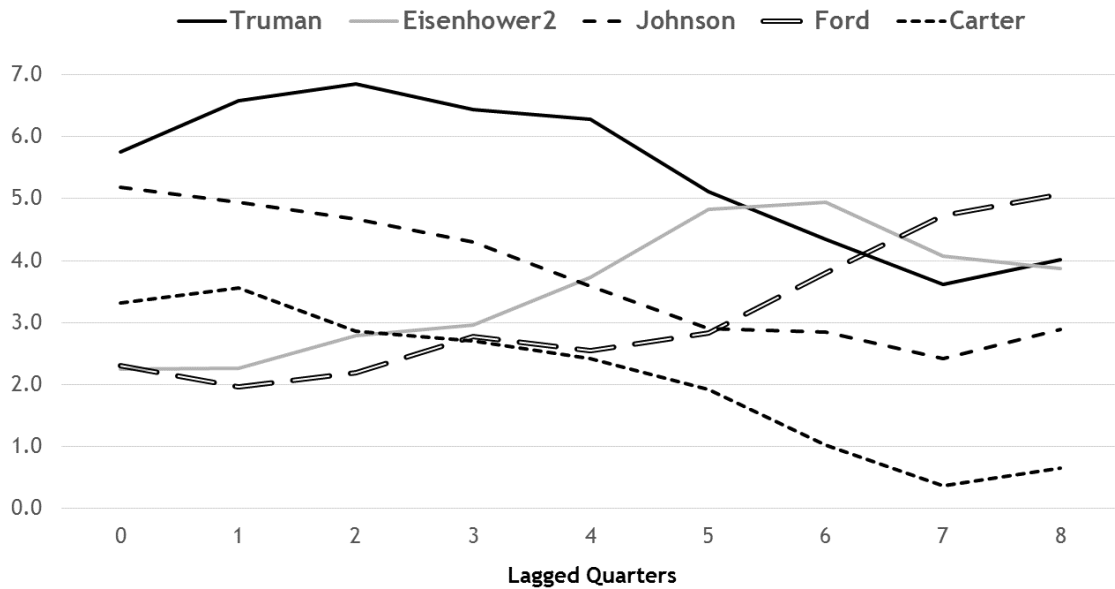


The sensitivity of individual presidencies to just one additional quarter of lag can be high. The average growth rate for Bill Clinton’s first term is either 3.4 or 4.2, depending on how his term is defined. If defined by the sixteen quarters starting in January 1992, then it is 3.4, but if defined as the sixteen quarters following a lag of eight quarters, then it is 4.2. The standard deviation of the nine possible definitions (0-8 lags) is 0.24 points for Clinton¹. The most recent four terms – two Obama and two Bush – also have relatively low standard deviations

between 0.2 and 0.3 points, but the recent moderation is half of the typical standard deviation of 0.59.

For example, Harry Truman’s second term began in the first quarter of 1949 with a GDP contraction of -5.4 percentage points. Indeed, three of the four quarters in 1949 had negative growth rates, whereas 1950 – Truman’s final year in office – had quarterly GDP growth rates of 16.9, 12.7, 16.3, and 8.0 percent. Depending on what lag is used, the average growth rate for Truman’s term can be said to be 6.9 points or 3.6 points. Figure 3 shows how Truman’s growth rate fluctuates depending on how his term is lagged, compared to four other highly variable presidential terms. Growth rates decline with lags for Democrats, especially Johnson and Carter. In contrast, the two presidential terms in which growth increases with lags are Republican, Eisenhower2 and Ford.

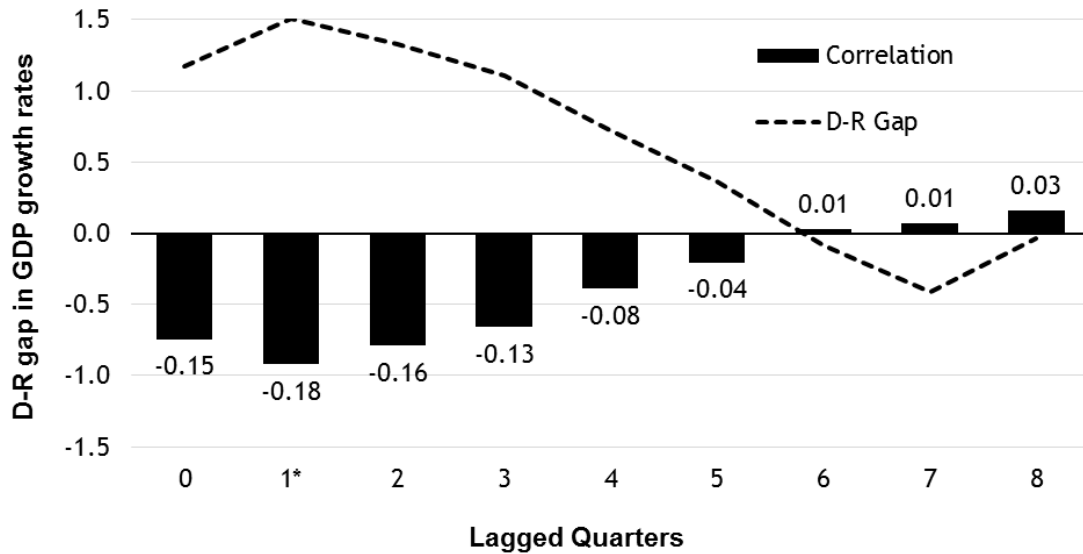
Figure 3. Average GDP growth rates of presidential terms over different lags



Turning to the question of statistical significance, the simple correlation between real GDP growth and presidential party (a dummy variable where Republican is 1 and Democrat is 0) peaks with a one-quarter lag. Figure 4 shows how the correlation peaks and declines with successive lags.

Econometric tests using an AR(2) model reveal that the one-quarter party lag is the only lag dummy that cannot be rejected with a p-value below 10 percent. Partisan lags of 0 and 2 are rejected, as are longer lags, as are other explanatory variables such as partisan control of the House of Representatives, Senate, and unified government. It seems unlikely that the one lag presidential partisan variable is more than a statistical fluke.

Figure 4. Presidential Party and GDP Growth



II. Discussion

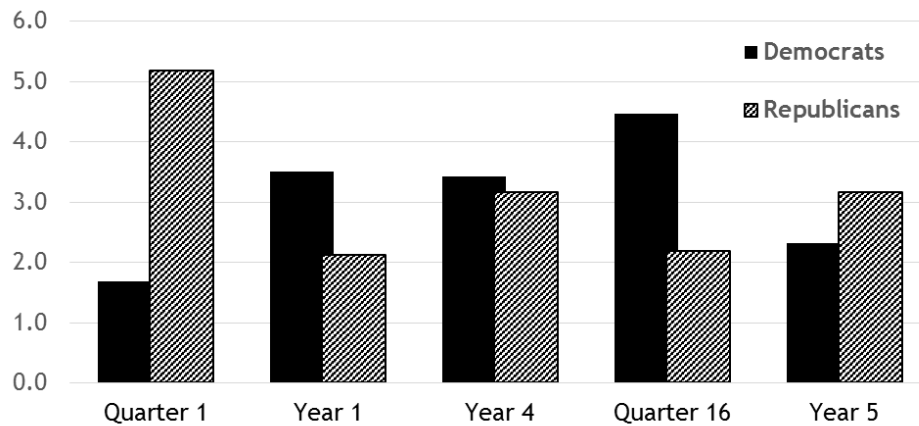
Early in the Blinder-Watson paper, a figure is presented showing average growth rates over each four years of a presidency, by party. During year one, Democrats have a sizeable advantage of about 4 percentage points, but by year

four it has narrowed to a single point. My recreation of that figure (figure 5 below) includes an additional fifth year that they neglected – the year after a presidential term ends. The fifth year is in one way a better barometer of policy impact sans politics because it is the least likely to be clouded by re-election meddling, regardless if the winner is of the same party or even the same individual re-elected. In year 5 after a Republican was president, the average growth rate is almost a whole percentage point higher than when a Democrat was presidents, which may reflect better long-term policies.

Figure 5 also considers the first and last quarter of a 4-year term, revealing that the first quarter D-R gap is enormously negative (i.e., advantage Republicans). By lagging exactly one quarter, the R's lose a great deal. On the other hand, the first year gap is enormously positive (i.e., advantage Democrats), even though it includes that dramatically negative quarter 1. By including the latter three quarters while cutting the first gives D's a double bonus, and one that has no theoretical justification.

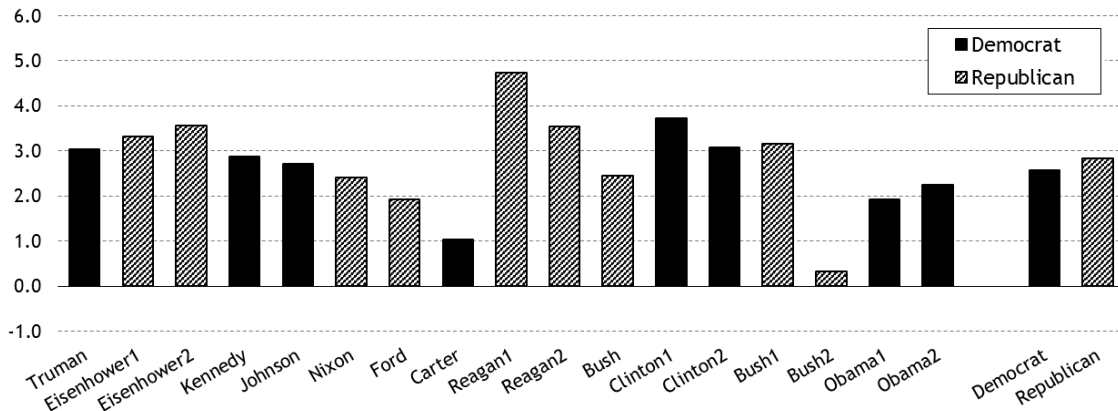
The end of each presidential term is also very interesting. Democratic growth rates in quarter 16 are twice as high as Republican ones. That may indicate superior economic performance, but it also may indicate politically-motivated stimulus efforts.

Figure 5. Growth rates within presidential terms



The challenge we face is how to appropriately define an *economic* presidential term. So far we have been restricting our analysis to discretely cut time periods, with no overlapping influences. For most students, the statement that the average growth rate during President Obama’s first term was 1.4 percent means the average of the sixteen quarters from Q1 of his inaugural year in 2009 until Q4 of 2012. If we lag these neatly defined terms, as Blinder-Watson posit should be done, then a lag of six quarters yields a powerfully different scorecard not just for partisan identity but, more importantly, for individual administrations. Figure 6 does exactly that, combining per capita GDP growth with a six quarter lag. And with this perspective, Ronald Reagan’s first term stands far above the others. Reagan’s second term is tied for the second fastest average growth rate with Clinton1 and Eisenhower2. The other administration that benefits from this extended lag perspective is Barack Obama’s, and it may well improve further as data through 2018 are recorded. For modern Democrats, it would seem fitting that the Great Recession is fully owned by Bush2 in this 6-quarter lag analysis.

Figure 6. Average annualized GDP growth, lagged 6 quarters



The review so far suggests that a more nuanced definition would allow for overlapping influences, such that the fifth/first year (or ninth/first year) would credit some portion of the economic performance to the former and some to the current president.

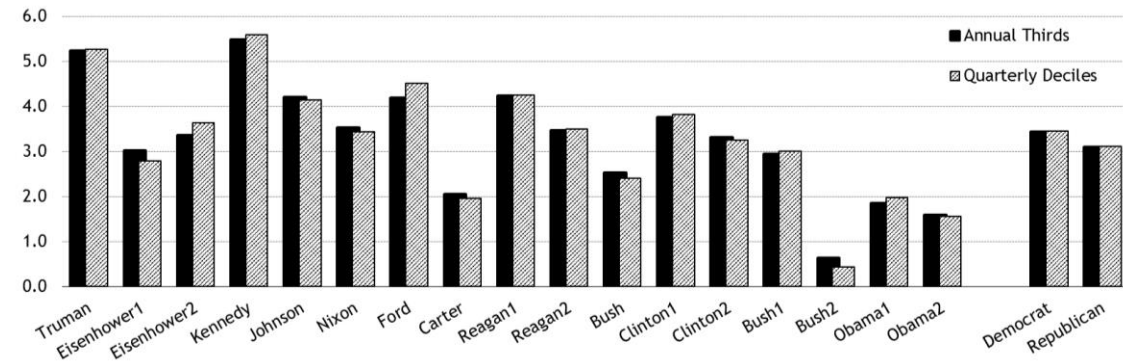
At an April 21, 1961 news conference, President Kennedy famously remarked that, “victory has one hundred fathers, but defeat is an orphan.” The same might be said of expansions and recessions. Who should get credit for the mid-1990s boom? Reagan laid the institutional foundation. Bush made the tough fiscal compromise. Clinton cut taxes and put NAFTA into effect. All deserve credit, it would seem. But who deserves blame for the double digit inflation of the late 1970s? A case can be made to blame Carter, Ford, Nixon, and Johnson.

The discrete separation of one term from the next, untethered from time in office, is fraught with subjectivity, a process that might be called economic gerrymandering. What if instead we allowed for overlapping presidential influence on the economy?

If we assume that the credit for a 4-year presidential term is symmetrical, fading in at some portion per year or quarter until reaching 100 percent and fading out to zero, then the question is whether to fade in over years or quarters. I constructed two formulas. The first accounts annual thirds, meaning that the first

year is credited one-third to the new president, two thirds to the predecessor. During the second year, two thirds is credited to the new president. During years three and four, all credit goes to the current president, followed by fading responsibility of two-thirds and one-third for the fifth and sixth years respectively (that is, the two years after the legal term ends). The second formula fades in responsibility by one-tenth per quarter and fades out in reverse fashion. For example, using this overlapping approach Jimmy Carter gets credited with ninety percent of the growth during 1981q1. Results from both approaches applied to per capita real GDP growth are similar, shown in figure 7.

Figure 7. Average annualized per capita GDP Growth with overlapping



With no economic gerrymandering, the overlapping credit for economic growth reveals a very different composite of the presidential performance. Using overlaps, the average growth rate of Democratic presidents is 3.4 compared to 3.1 for Republicans, and this D-R gap is the same for both overlap methods I assessed. This may be smaller than the Blinder-Watson gap, but its theoretical foundation is more forthright.

As for individual presidencies, the overlap methods offer new insights. The Kennedy administration (appropriately truncated) experienced the highest growth rates, unlike the no-lag leader (Truman) and the 6-quarter lag leader

(Reagan). Interestingly, the 10-month Ford administration is shown to be exceptionally strong with this overlapping approach, a fact concealed by all the discrete approaches using any lag length.

III. Conclusion

This paper reviews a provocative but well-supported hypothesis that Democratic presidents have overseen superior economic performance since at least Harry Truman. I confirmed the basic hypothesis using updated data from the same sources that also include the second Obama term. Section I explored whether Blinder-Watson's hypothesis hinges on their use of a one-quarter lag in defining a presidential term. It does.

The high degree of variability of presidential growth rates relative to the lag timing throws significant doubts on the Blinder-Watson hypothesis. Without a better rationale, there seems little reason to trust a hypothesis that hinges on a coincidental use of a short lag that has no historical foundation, particularly when that lag coincidentally maximizes the D-R gap and the statistical significance of partisan identity as an explanatory variable.

A superior way of assessing the economic performance of a presidential administration might be to consider overlapping influence of current and former presidents during a term, an approach that was developed in Section II. Whether overlapping quarters or years, the results were different than when any discrete lagging of terms is utilized.

Future work on presidential economic performance is needed, but it should recognize that party identification is an elastic concept. Political writers often observe that a Republican (or Democrat) in the White House today would have been a Democrat (or Republican) three decades ago. Ronald Reagan advocated for greater levels of immigration and signed legislation that granted

amnesty to millions of illegal immigrants in 1986, a policy anathema to conservatives in recent years. Richard Nixon enacted wage and price controls, and famously went to China, both decidedly non-conservative positions. Liberal JFK cut income tax rates at all levels, the first president to do so since *before* the Great Depression, and tax-cutting (especially for the rich) is decidedly out of step with modern progressive ideology. These examples show that the inconsistent relationship between partisanship and ideology is a challenge that blurs the important question of how policy affects the economy.

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