

# Are Stock Returns and Output Growth Higher Under Democrats?

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## Abstract

Recent literature suggests that both stock returns and economic growth are significantly higher under Democratic presidential administrations. This is a puzzle in that persistent differences in stock returns seem unlikely in efficient markets, and it is not obvious why Democrats should do better. Often these kinds of results go away with more data, and this is true here. In this paper the sample is extended to 28 administrations, from Wilson-1 through Biden. While the mean stock return and the mean growth rate are higher under the Democrats, neither of the differences in means is significant at conventional significance levels.

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# 1 Introduction

Recent literature suggests that both stock returns and economic growth are significantly higher under Democratic presidential administrations than under Republican presidential administrations in the United States. Regarding stock returns, Santa-Clara and Valkanov (2003) examined the period 1927–1998 and found significant differences. They found this a puzzle, since persistent differences seem unlikely in efficient markets. Pástor and Veronesi (2020) extended the sample period to 1927–2015 and also found significant differences. They argue that Democrats are more likely to get elected when risk aversion is high, which then mean-reverts during the administration.

Regarding output growth, Blinder and Watson (2016) examined the 16 administrations between 1952 and 2012 (Truman-2 and Obama-1). They found that output growth and other measures of economic activity are significantly higher under the Democrats. Pástor and Veronesi (2020) got similar results for the 1930–2015 period. The Blinder-Watson result was cited in the media—Leonhardt (2021)—at the time of the switch of administrations in 2021. After interviewing a number of economists, Leonhardt concluded that “much of the partisan gap remains mysterious.” Cohan and Potrafke (2021) examine the 1949–2017 period and find significant output growth differences between Democrats and Republicans, including state governments. They also find the result puzzling.

Often these kinds of results go away upon further analysis or more data. This appears to be true in the present case. For the results in this paper the sample is extended to 28 administrations between 1916 and 2024 (Wilson-1 and Biden). This period includes 15 Democratic administrations and 13 Republican. While mean returns across the administrations are higher under the Democrats, none of the differences in means is significant at conventional significance levels. There is considerable variation in the mean returns across administrations, which results in lack of significance. Similarly, while the mean output growth rate under the

Democrats is larger, the difference is not significant. Again, there is considerable variation in output growth across administrations. Section 6 contains results going back nine more administrations to 1880 (Hayes), with the same conclusion.

The reason for the different conclusion in this paper is because of the use of the extended sample period. The results in Section 5 confirm the significant results of the previous studies using their sample periods.

## 2 The Tests

Consider stock returns first. Let  $Z_t$  denote a measure of stock returns during administration  $t$ , where  $t$  runs from 1 to 28. Let  $m_D$  and  $m_R$  denote the means of  $Z_t$  over the Democratic (D) and Republican (R) administrations, respectively. Assuming that  $Z_t$  is drawn from a normal distribution, it is straightforward to test the hypothesis that the means are equal, assuming either a common variance between the D and R observations or separate variances. For output growth, let  $Q_t$  denote a performance measure of the economy during administration  $t$ , where again  $t$  runs from 1 to 28. Then treat  $Q_t$  as  $Z_t$  above and run the tests.

Another way to test for the equality of means is to regress  $Z_t$  or  $Q_t$  on a constant and  $D_t$ , where  $D_t$  is 1 if the administration is Democratic and 0 if Republican. The test of the equality of means is that the coefficient of  $D_t$  is zero, which is just a t-test. This is the same test as the equality of means test assuming common variance. If in this regression White's (1980) correction for heteroskedasticity is used, the test is the same as the equality of means test assuming separate variances.

In Section 4 both t-statistics are reported, one assuming common variance and one assuming separate variances. A third t-statistic is also reported, which uses the Newey-West (1987) correction for heteroskedasticity and autocorrelation with a lag of 2. Both Pástor and Veronesi (2020) and Blinder and Watson (2016) correct for heteroskedasticity and autocorrelation. As will be seen, the results are not sensitive to which correction is used.

Another significance test is a non parametric test due to Blinder and Watson (2016). As discussed in Section 5, they analyzed 16 administrations, 9 R and 7 D, 16 observations on  $Q_t$ . There are 11,440 different ways in which 9 observations can be assigned to R and 7 to D. For each assignment compute the mean for R and the mean for D and take the difference. Compare the absolute value of this difference to the actual difference (the observed difference in the data). Then count up the number of times out of 11,440 that the absolute value of the computed difference is greater than the actual difference. The percent of times is the p-value for the null hypothesis that the R and D means are equal. It will be seen that this non parametric test gives very similar results to the others.

### 3 The Data

The observations begin in 1912 and go through 2024, for 28 administrations. The variables for which data were collected are:  $RS$ , Three-Month Treasury Bill Rate (monthly),  $SP$ , S&P 500 Stock Price Index (monthly),  $VWD$ , CRSP Value-Weighted Return Including Dividends (monthly),  $Y$ , Real GDP (quarterly). The collection is discussed in the Appendix.

Two measures of stock returns have been used and one measure of output growth. All the (four-year) log differences have been divided by 4 to put them at an annual rate and multiplied by 100 to put them in percentage points.

- $S\&P$ : Simple S&P 500 return. From 1926 on the monthly data on  $SP$  are the prices on the last trading day of the month. Between 1912 and 1925 the prices are the average for the month.  $S\&P$  is the log of  $SP$  at the end of December (or the average in December) of the fourth year of the administration minus the log of  $SP$  at the end of December (or the average in December) of the fourth year of the previous administration.

- *ZRS*: Three-month Treasury bill rate return. For this measure the monthly data on *RS* were converted to quarterly data by averaging the three months. *ZRS* is the return of investing each quarter in three-month Treasury bills and rolling them over throughout the administration. Using a value of 1.0 at the beginning, *ZRS* is the log of the value at the end.
- *RET*: CRSP excess return. *RET* is the return on the CRSP value-weighted stock portfolio including dividends in excess of the return on the three-month Treasury bill rate. The data on *VWD* are monthly returns. The values were accumulated over the 48 months of an administration. Using a value of 1.0 at the beginning, the log of the value at the end was taken. Then *ZRS* was subtracted from this value to get the excess return.
- *G*: Real GDP growth rate. The data on *Y* are quarterly. *G* is the log of *Y* in the first quarter of the next administration minus the log of *Y* in the first quarter of the current administration. This is the main specification of Blinder and Watson (2016), which assumes that an administration is responsible for the first quarter of the next administration. This modification was not made for the Biden administration because data for the first quarter of 2025 were not available at the time of this research.

Table 1 presents observations on *S&P*, *RET*, and *G* for the 28 administrations. These measures are for the four years of the administration, but they are at annual rates. An administration is denoted by its last year.

*S&P* varies from -31.45 percent for 1932 (Hoover) to 23.73 percent for 1936 (Roosevelt). For the administrations between 1988 and 2024 the return has been large except for 2004 and 2008 (G.W. Bush). Five of these ten administrations were Republican, including 2004 and 2008. The variability across administrations is large. As reported in Table 2 (a) below, the standard deviation of *S&P* across the 28 administrations is 11.20 percent.

**Table 1**  
**Data for 28 Administrations: 1916–2024**  
**Percentage Points at Annual Rates**

	Last Year	<i>D</i>	<i>S&amp;P</i>	<i>RET</i>	<i>G</i>
1	1916.	1	1.10	-1.46	-0.09
2	1920.	1	-9.10	-13.13	-1.48
3	1924.	0	10.00	6.29	8.44
4	1928.	0	21.85	19.50	3.49
5	1932.	0	-31.45	-31.49	-8.94
6	1936.	1	22.73	28.27	10.85
7	1940.	1	-12.12	-5.96	5.35
8	1944.	1	5.68	11.92	13.35
9	1948.	1	3.38	7.32	-4.05
10	1952.	1	13.96	17.73	6.20
11	1956.	0	14.08	16.23	2.59
12	1960.	0	5.48	6.99	2.09
13	1964.	1	9.43	8.82	5.55
14	1968.	1	5.08	6.10	4.79
15	1972.	0	3.20	-0.43	3.42
16	1976.	0	-2.35	-5.87	1.86
17	1980.	1	5.84	5.54	3.33
18	1984.	0	5.21	-1.03	2.97
19	1988.	0	12.68	8.52	3.78
20	1992.	0	11.26	8.05	1.98
21	1996.	1	13.27	10.57	3.40
22	2000.	1	14.45	9.28	3.94
23	2004.	0	-2.14	-0.46	2.77
24	2008.	0	-7.35	-8.15	0.71
25	2012.	1	11.42	14.17	2.01
26	2016.	1	11.27	11.59	2.34
27	2020.	0	12.94	12.89	2.05
28	2024.	1	11.21	7.25	3.12

*S&P* = Simple S&P 500 return.

*RET* = CRSP excess return.

*G* = real GDP growth rate.

*D* = 1 if Democratic, 0 if Republican.

$RET$  varies from -31.49 percent for 1932 (Hoover) to 28.27 percent for 1936 (Roosevelt). There is a large positive correlation between the two returns.  $RET$  is obviously a better measure of returns than is  $S\&P$ , but the latter has also been used because it is needed for the extension of the administrations back to 1880. From Table 2 (a) the standard deviation of  $RET$  across the 28 administrations is 11.40 percent.

$G$  varies from -8.94 percent for 1932 (Hoover) to 13.35 percent for 1944 (Roosevelt). From Table 2 (a) the standard deviation of  $G$  across the 28 administrations is 4.09 percent, although Table 1 shows that the variation is less in the post World War II period.

## 4 The Results

The main results in this paper are presented in Table 2 (a). Presented for each of the three measures are: D mean, R mean, the difference in means, the overall standard error, the D standard error, the R standard error, the t-statistic for the hypothesis that the means are equal using different estimated variances, the t-statistic using the overall estimated variance, and the t-statistic using the Newey West correction with lag of 2. Remember that the t-statistics are tests of the hypothesis that the coefficient of  $D_t$  is zero from a regression of the measure on a constant and  $D_t$ . The second t-statistic is for the standard OLS regression. The first uses White's correction for heteroskedasticity.

The results are easy to summarize. None of the three differences between D and R is statistically significant. The mean differences are higher for D, but the standard deviations are also high. The net effect is insignificant differences. This shows that the previous significant results in the literature are fragile. The mean difference for  $RET$  is larger than it is for  $S\&P$ , but again not significant.

**Table 2**  
**Mean Results for 28 Administrations: 1916–2024**  
**Percentage Points at Annual Rates**  
**(a)**

	$m_D$	$m_R$	$m_D$ $-m_R$	$\sigma$	$\sigma_D$	$\sigma_R$	$t_1$	$t_2$	$t_3$
<i>S&amp;P</i>	7.17	4.11	3.07	11.20	8.99	13.33	0.70	0.72	0.78
<i>RET</i>	7.87	2.39	5.48	11.40	9.72	13.09	1.24	1.27	1.32
<i>G</i>	3.91	2.09	1.81	4.09	4.34	3.79	1.18	1.17	1.05

**Mean Results for 22 Administrations**  
**PV Sample Period: 1932–2016**  
**(b)**

<i>S&amp;P</i>	8.70	0.86	7.84	10.92	8.45	13.33	1.61	1.68	1.57
<i>RET</i>	10.45	-0.76	11.21	10.61	8.06	13.07	2.36	2.47	2.31
<i>G</i>	4.76	1.32	3.43	4.08	4.36	3.71	1.99	1.96	1.79

**Mean Results for 16 Administrations**  
**BW Sample Period: 1952–2012**  
**(c)**

<i>S&amp;P</i>	10.49	4.45	6.04	6.14	3.83	7.41	2.11	1.95	1.73
<i>RET</i>	10.32	2.65	7.66	6.56	4.35	7.82	2.49	2.32	2.38
<i>G</i>	4.17	2.46	1.71	1.17	1.44	0.92	2.74	2.89	3.21

See notes to Table 1.

$m_d$  = D mean,  $m_R$  = R mean,  $\sigma$  = overall standard deviation,

$\sigma_D$  = D standard deviation,  $\sigma_R$  = R standard deviation,

$t_1$  = t-statistic, different variances,  $t_2$  = t-statistic, common variance,

$t_3$  = t-statistic, Newey West lag 2.

The non parametric test discussed in Section 2 was performed for *S&P*. There are 28 administrations, 15 D and 13 R. The total number of different assignments is 37,442,160. The number of cases where the difference in means was greater in absolute value than 3.07, the mean difference in Table 2 (a), was 19,517,395, a ratio of 0.516, which is the p-value. For the t-statistic  $t_2$  in Table 3, 0.72, the p-value is 0.478 (26 degrees of freedom), so the non parametric test gives similar results.

The non parametric test was also run for *G*. The p-value was 0.297. For the t-statistic  $t_2$  in Table 2 (a), 1.17, the p-value is 0.253 (26 degrees of freedom), so again the non parametric test gives similar results.

## 5 Duplicating Previous Results

To check that the above methodology is consistent with the previous literature, the significant results of Pástor and Veronesi (2020) and Blinder and Watson (2016) have been duplicated. This shows that the lack of significance in this paper is due to the use of an extended sample period rather than the use of a different procedure or different variables.

### **Pástor and Veronesi (2020) (PV)**

PV's sample period was 1927–2015. This includes half of administration 1928 and three fourths of administration 2016. An approximation to this sample period is administrations 1932 through 2016. Results for these 22 administrations are presented in Table 2 (b). For *RET*, which is the measure PV used, the mean difference is 11.21, with t-statistics of 2.36, 2.47, and 2.31. This compares to the t-statistics in Table 2 (b) of 1.24, 1.27, and 1.32. The difference between D and R is significant for this sample period.

Regarding  $G$ , the t-statistics are 1.99, 1.96, and 1.79, which compares to 1.18, 1.17, and 1.05 in Table 2 (b). The difference is thus statistically significant at conventional levels for the PV sample period versus the expanded sample period in Table 2 (b).

### **Blinder and Watson (2016) (BW)**

BW use a considerably shorter sample period, 16 administrations, 1952–2012. Results are presented in Table 2 (c) for the 1952–2012 sample period. The results for  $G$  in Table 2 (c) are close to the BW results. The D mean is 4.17 in Table 2 (c) versus 4.09 for BW. The R mean is 2.46 versus 2.67. The difference is 1.71 versus 1.42. The t-statistics are 2.74, 2.48, and 3.21 versus 2.25 for BW. The failure to reproduce exactly is likely due to the use of later revised data here. The conclusion is, however, the same. The difference in the mean growth rate is significant for the BW sample period. The difference for  $RET$  is also significant.

The non parametric test was run for  $G$ , and out of the 11,440 possible assignments 129 had the absolute value of the computed difference greater than 1.71, the mean difference in Table 2 (c), for a p-value of 0.011. BW ran this test and got 146 cases, for a p-value of 0.013. So their result has been almost exactly reproduced here. For the t-statistic  $t_2$  in Table 2 (c), 2.89, the p-value is 0.012 (14 degrees of freedom), so again the non parametric test gives almost identical results.

## **6 Adding Nine More Administrations**

As discussed in the Appendix, monthly data from Robert Shiller’s website on  $SP$  are available back to 1871.01. Quarterly data on real GDP are available back to 1877.1. It is thus possible to compute observations on  $S\&P$  and  $G$  back to the administration ending in 1880 (Hayes). For these administrations the new administration did not begin until March, which  $S\&P$  and  $G$  capture by assuming

that the first quarter of the next administration is the responsibility of the previous one.

Table 3 contains observations for the nine administrations. It has the same format as Table 1 but without *RET*. Only two of the nine administrations were Democratic, 1888 and 1896, one with a fairly good return and growth and one not. A number of the Republican administrations have a good return and growth.

The mean results for the 37 administrations are presented in Table 4. This table has the same format as Table 2. The t-statistics for *S&P* are about the same as they are in Table 2 (a). For *R1* the D mean is 6.19 versus 7.17 in Table 2 (a); the R mean is 4.00 versus 4.11; and the difference is 2.19 versus 3.07. The t-statistics are 0.65, 0.64, and 0.68 versus 0.70, 0.72, and 0.75. The additional observations have not changed the story.

The t-statistics for *G* in Table 4 are lower than they are in Table 2 (a). For *G* the D mean is 3.65 versus 3.91 in Table 2 (a); the R mean is 2.99 versus 2.09; and the difference is 0.66 versus 1.81. The t-statistics are 0.52, 0.53, and 0.46 versus 1.18, 1.17, and 1.05. The difference in growth means is clearly not significant.

**Table 3**  
**Data for 9 Administrations 1880-1912**  
**Percentage Points at Annual Rates**

	Last Year	<i>D</i>	<i>S&amp;P</i>	<i>G</i>
1	1880.	0	12.23	8.09
2	1884.	0	-7.42	1.88
3	1888.	1	4.23	2.21
4	1892.	0	1.74	5.59
5	1896.	1	-6.67	1.30
6	1900.	0	12.18	6.27
7	1904.	0	4.58	2.95
8	1908.	0	2.26	3.86
9	1912.	0	0.95	3.96

See notes to Table 1.

**Table 4**  
**Mean Results for 37 Administrations: 1880–2024**  
**Percentage Points at Annual Rates**

	$m_D$	$m_R$	$m_D$ $-m_R$	$\sigma$	$\sigma_D$	$\sigma_R$	$t_1$	$t_2$	$t_3$
<i>S&amp;P</i>	6.19	4.00	2.19	10.32	9.07	11.27	0.65	0.64	0.68
<i>G</i>	3.65	2.99	0.66	3.78	4.12	3.47	0.52	0.53	0.46

See notes to Table 2.

## 7 Means versus Variances

In a series of papers in the mid 1980s—see, for example, Romer (1986)—Christina Romer argued that data before the Great Depression have measurement errors such that they show greater economic variation than actually existed. By adding earlier observations in this study it could be that the lack of significance is due to increased variation with no decrease in the mean differences, where the increased variation is due to measurement error. This is, however, not the case. The following chart gives results for *S&P* and *G*.

			$m_D$	
<i>S&amp;P</i>			$-m_R$	$\sigma$
Table 4	1880-2024	37 obs.	2.19	10.32
Table 2 (a)	1916-2024	28 obs.	3.07	11.20
Table 2 (b)	1932-2016	22 obs.	7.84	10.92
Table 2 (c)	1952-2012	16 obs.	6.04	6.14
<i>G</i>				
Table 4	1880-2024	37 obs.	0.66	3.78
Table 2 (a)	1916-2024	28 obs.	1.81	4.09
Table 2 (b)	1932-2016	22 obs.	3.43	4.08
Table 2 (c)	1952-2012	16 obs.	1.71	1.17

For *S&P* mean differences get smaller as earlier observations are added, and the overall standard deviation,  $\sigma$ , does not change much except for the short 1952-2012 period. This is also true for *G* except again for the 1952–2012 period. The standard deviation is thus not sensitive to adding the earlier observations ignoring the short 16-observation case.

## 8 Conclusion

The results in this paper show that the view that stock returns and output growth are higher under Democrats is not robust to adding more observations. Using data on the past 27 administrations does not result in significant differences between Democrats and Republicans. This is also the case when the nine administrations between Hayes and Taft are added, although this result should be discounted some because the data are not as good.

In many cases the differences in means between the two parties look large, but there is considerable variation across administrations and the differences are not statistically significant. There is thus no puzzle, contrary to the conclusions of Leonhardt (2021) and Cahan and Potrafke (2021). As noted in the Introduction, the fact that there is no puzzle is not particularly surprising. In the case of significant stock return differences across administrations, theory suggests otherwise. In the case of significant growth differences, there is no compelling theory either way.

## Appendix: Data Collection

Quarterly data on real GDP were collected for 1877–2024. Annual data for 1929–1946 and quarterly data for 1947.1–2024.4 were obtained from the BEA website. The units are 2017 dollars. Quarterly data for 1877.1–1946.4 are available from Balke and Gordon (1986), pp. 789–795. The Balke and Gordon values were spliced to the BEA values. All the Balke and Gordon quarterly values for 1877.1–1929.4 were multiplied by the same number. This number is the ratio of the BEA value for 1929 to the 1929 value in Balke and Gordon (1976), p. 782. For 1930.1–1946.4 each Balke and Gordon quarterly value for a given year was multiplied by a splicing factor for that year. The splicing factor is the ratio of the BEA value for that year to the respective yearly value in Balke and Gordon (1976), pp. 782–783.

Daily data on  $SP$ , the S&P 500 stock price index, were obtained from the Yahoo Finance website for 1928–2024. From these daily data a monthly series was constructed using the price on the last trading day of the month. End of month data were collected from CRSP for the 1926.01–1927.12 period. Monthly data for 1871.01–1925.12 were collected from Robert Shiller’s website. These data are the average price for the month, not the price at the end of the month.

Monthly data on  $VWD$  were obtained from CRSP for the 1926.01–2024.12 period. It is in units of monthly percent changes. For the 1912.01–1925.12 period,  $VWD$  was taken to be the monthly percent change in  $SP$ . The correlation between  $VWD$  and the monthly percent change in  $SP$  for the 1926.01–2024.12 period is 0.979. This procedure is thus likely to be a good approximation.

Monthly data on the three-month Treasury bill rate were obtained from the Board of Governors of the Federal Reserve System for the 1934.01–2024.12 period. Monthly data for the 1920.01–1933.13 period were taken from the FRED website, the three-month Treasury bill rate from the NBER Macroeconomic Database. Monthly data for the 1912.01–1918.12 period were also taken from the FRED website, the commercial paper rate for New York from the NBER Macroeconomic

Database.  $RS$  for this paper was taken to be the commercial paper rate minus 1.75, which splices it to the T-bill series.

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