Divided Government and Stock Returns*

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Abstract

We document that unified US governments are associated with higher annual excess and real stock return than divided US governments. For the value-weighted portfolio the difference is 9.95% and for the equal-weighted 18.37%. These results are statistically and economically significant and robust in subsamples. Interestingly, corresponding differences in volatility fail to give a justification for the difference in returns compensation for risk as they go in the opposite direction. Similar results are obtained for real GDP growth rates. In particular, average annual real GDP growth for unified and divided governments are 3.70% and 2.34% respectively.

Keywords: Unified Government, Presidential Puzzle, Stock Returns, Growth.

JEL Classification: D72, E02, E32, E65, N12, N42

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1 Introduction

The Presidential Puzzle, named and first described in the academic literature by Santa-Clara and Valkanov (2003), is the phenomenon that US stock market excess returns are on average far higher during Democrat presidencies than Republican ones: our estimates are 10.7% during Democrat presidencies versus 0.2% for Republican ones between 1927 and 2016. In this paper, we document a separate but related phenomenon. We define a government as United if the same party controls the White House and holds a majority in both houses of Congress: the Senate and the House of Representatives (the House). A non-United government is defined as Divided. Under United governments, annual excess stock market returns averaged 10.7% between 1927 and 2017, versus 0.8% under Divided governments: a statistically significant difference of 10%. For equal-weighted stock returns, both sets of results are even more striking: under United governments the average equal-weighted annual excess return over the same period was 17.5% versus negative 0.9% for Divided governments, compared with 15.7% for Democrat presidencies versus 0.1% for Republican. Finally, economic growth varies across regimes: postwar average annual GDP growth is 4.2% under United governments versus 2.6% under Divided compared with 4.5% under Democrat presidencies versus 2.6% under Republican.

These findings are not the same result: About a quarter of years under United governments were under Republicans in our main sample, while just under a quarter of Divided years saw Democrats in the White House. We show below that both results (mostly) continue to hold independently of each other in different sample periods. In the period since 1947 (which means that the impact of tail events such as Great Depression and World War II is excluded), the United government result dominates the Presidential Puzzle. In fact, since 1927, United Democrat stock returns were 11.1%; Divided Demo-

crat 9.6%; United Republican 9.9% and Divided Republican negative 3.3%, with much greater disparities over these four regimes for equal-weighted returns. For economic growth over a long period since 1889 the numbers are: United Democrat 5.4%; Divided Democrat 2.3%; United Republican 3.7% and Divided Republican 2.1%. In fact, for this sample period, the United government result also holds for economic growth but for different Presidents it does not[1]. The role of the government in the determination of asset prices is obviously important, but has received little attention in the literature other than the seminal work of Pastor and Veronesi (2017). This paper establishes an important new stylized fact over and above the important finding of Santa-Clara and Valkanov (2003): When governments control the legislative arm, average returns, especially on the stocks of smaller firms, and economic growth are much higher.

1.1 Related Literature

Santa-Clara and Valkanov (2003) are not the only authors that have documented the difference in stock returns under Republican and Democratic presidents. Other seminal works include Herbst and Slinkman (1984), Huang (1985), Hensel and Ziemba (1995), Siegel (1998), and Johnson et al. (1999). To our knowledge, our paper is the first to formally test the relation between divided an unified governments and the stock market. There is also a dense empirical and theoretical research literature about the effects of political cycles on the macroeconomy. For surveys in this area, see Alesina et al. (1997) and Harms (2001). These books offer convincing evidence that political variables have an impact on the state of the macroeconomy. Furthermore, Hibbs (1987), Alesina and Sachs (1986), and Blinder and Watson (2016) constitute the core papers that discuss the partisan growth gap.

[1]We thank Valerie A. Ramey for sharing her real GDP data from 1889 to 2016 with the authors.

The organization of the rest of this paper is as follows. The next section discusses the data that were used. Section 3 describes main findings of our research and finally section 4 concludes.

2 Data

2.1 Financial and Economic Variables

In this section, we give a full description of the variables that we will use in the paper. The data that we use for stock returns are monthly stock returns from Center for Research in Security Prices (CRSP) from January of 1927 (1927:01) to December of 2017 (2017:12). In particular, we consider the logarithm of monthly returns of the value-weighted as well as the equal-weighted portfolios. From these log returns we subtract the log return on a three-month Treasury bill in order to obtain excess returns. We also consider the case of subtracting the logarithm of the US inflation rate in order to obtain real stock returns.

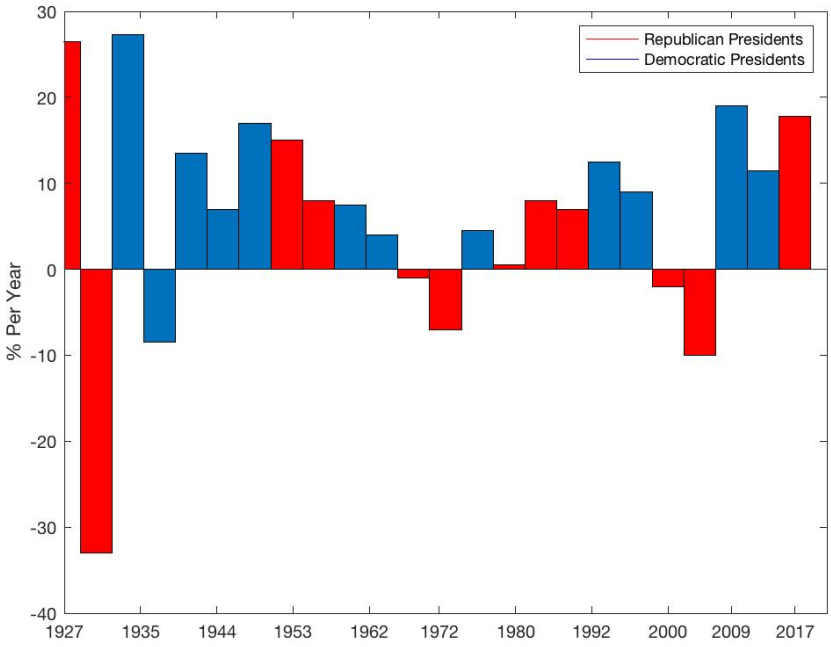

Figure 1: Average annual excess returns by presidential term, 1927 to 2017.Figure 1 displays the average annualized excess value-weighted returns during each presidential term for the 1927 to 2017 period. Republican administrations are denoted with red and democratic administrations with blue. Most Democratic presidencies have been associated with higher than average excess returns, with Roosevelt's (1937-1941) tenure being the only significant exception. Similarly, most Republican presidencies have been associated with significantly lower than average returns

All series considered in this paper are at monthly frequency. The entire sample period, 1927:01-2017:12, contains 1092 monthly observations, 24 elections, 12 Democratic and 12 Republican presidencies, 47 different governments, 23 unified (540 observations) and 24 divided ones (552 observations). In order to account for robustness we divide our sample into 2 equal subsamples. The first one is from January 1927 until June 1972 and the second one from July 1972 until December 2017. The latter includes the most recent period and includes 546 months under 6 Republican and 5 Democratic

presidents. The former subsample includes extreme major events such World War II and the Great Depression. For this reason we also consider a larger period without these events, namely from January 1947 until December 2017. Average stock returns under different presidencies are depicted on Figure 1.

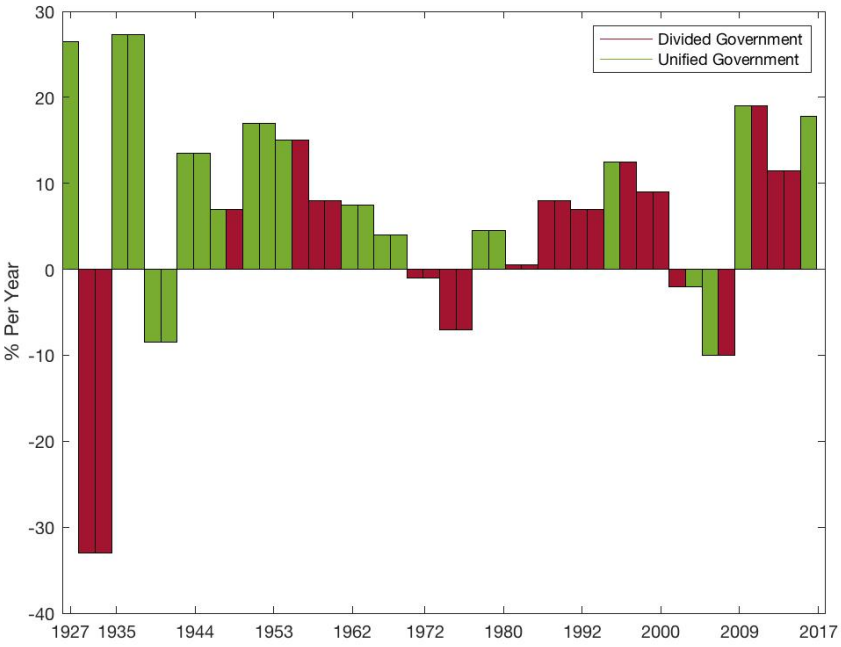

Figure 2: Average annual excess returns by each divided or unified government, from 1927 to 2017. Figure 2 displays the average annualized excess value-weighted returns during each presidential term for the 1927 to 2017 period. Divided government administrations are denoted with red and unified administrations with blue. Most unified government administrations have been associated with higher than average excess returns, with Roosevelt's (1937-1941) tenure being the only significant exception. Similarly, most divided government administrations have been associated with significantly lower than average returns.

The main purpose of this paper is to investigate the relationship between unified and divided governments and stock returns. For this reason we construct Figure 2, which

shows the average market returns under unified vs divided governments.

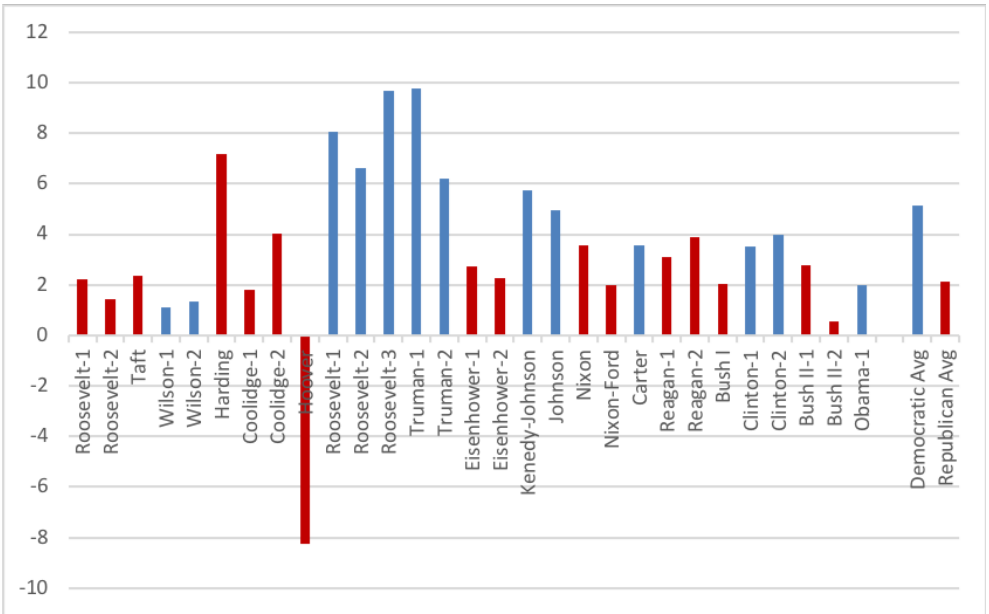

Figure 3: Figure 3 displays the Annual Average Growth Rate under Democrat vs Republican Presidents from 1900 to 2016. Republican administrations are denoted with red and democratic administrations with blue. Most Democratic presidencies have been associated with higher than average real GDP growth rates, with Roosevelt's (1941-1945) and Truman (1945-1949) tenure being the only significant exception. Similarly, most Republican presidencies have been associated with significantly lower than average returns

The second category of data we use, are real US GDP growth data. We obtained those data from the personal data set of Professor Valerie A. Ramey (see Owyang et al. (2013)). The most accessible database, that all relevant papers use (such as Santa-Clara and Valkanov (2003)), are from Bureau of Economic Analysis (BEA). However those data only consider post World War II period (that is after 1947). The data set we consider starts from January of 1889 and the frequency is quarterly. Figure 3 summarizes annual average growth rates under different presidencies, starting from the presidency of Theodore Roosevelt. The figure shows 16 republican presidencies with

average growth rate of 2.66% and 13 democrat presidencies with average growth rate 4.67%.

We repeat the same procedure for divided and unified governments. The results are depicted on Figure 4. The figure shows 23 divided governments with average growth rate of 2.09% and 35 unified governments with average growth rate 4.75%.

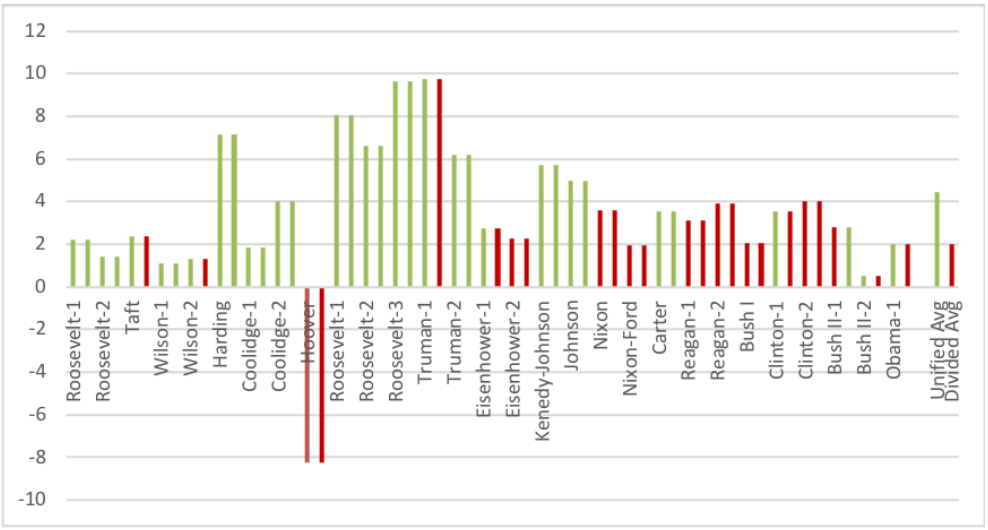

Figure 4: Figure 4 displays the Annual Average Growth Rate under Divided and Unified Governments from 1900 to 2016. Divided government administrations are denoted with red and Unified government administrations with blue. Most Unified governments have been associated with higher than average real GDP growth rates, with Roosevelt's (1941-1945) and Truman (1945-1947) tenure being the only significant exception. Similarly, most divided governments have been associated with significantly lower than average returns

2.2 Political variables

In section 2.1, we defined all the required economic and financial variables. In this subsection we define the political independent variables. Thus, we construct two monthly

time series. The first one is the democrat dummy variable, DEM, defined as $DEM = 1$ during times when a democrat president is in charge and $DEM = 0$ when a republican president in charge. The second variable that we introduce is the unified dummy variable, UN, defined as $UN = 1$ during times when a unified government is in charge and $DEM = 0$ when a divided government is in charge. We model the relationship between economic and financial dependent variables and political independent variables as follows: We assume that each month belongs to the latest scheme assuming office on that particular month. For example, if a Congress assumes office on January 3 and the president assumes office on January 20, then we assign the month of January to the new president and to the new combination of the legislative and executive branch when we want to check whether the government is divided or unified[2].

We find $DEM = 1$ in 52.7% of all months between January 1927 and December 2017, indicating that time in the White House is split almost roughly equally between Democrats and Republicans. We also find that $UN = 1$ in 49.4%, highlighting that divided governments governed USA almost the same time as unified ones.

3 Main Findings

3.1 Average Returns

In this part, we show empirically that unified governments have been associated with much higher average annual stock returns than divided governments. We also document that this difference is robust to different subsamples. We repeat the same procedure for

[2]Assigning latest scheme to the next month does not change our results

different presidents from 1927 to 2017, which give robust results as well. The measurement of the correlation between excess and real returns and the political variables (i.e. the dummies defined in section 2.2) is performed by the following simple regression:

$$\widetilde{r}_{t+1} = \alpha + \beta_1 \pi_t + \widetilde{u}_{t+1} \tag{1}$$

where the returns are denoted by $\widetilde{r}_{t+1}$ and the political variables by π_{t+1}.The political variables are defined with the following dummy variables:
$DIV_t = 1$ if a divided government is in office at time t; $DIV_t = 0$ otherwise.
$UN_t = 1$ if a unified government is in office at time t; $UN_t = 0$ otherwise.
The time index t indicates that the political variables are assumed to be known in the beginning of each month and the returns in the end. For our first experiment we use as political variable $UN = 1$, and we test the null hypothesis that $\beta_1 = 0$. Before we proceed to the main results, we present a table with the distribution characteristics of monthly excess returns of the value weighted portfolio. These are presented in Panel A.

Panel A - Distributions of Monthly Excess Returns - VWR

	(Panel A - Complete)			(Panel B Excl.1%-99%)		
	UN	DIV	Diff	UN	DIV	Diff
Mean	0.86**	0.05	0.81**	0.89**	0.1	0.79**
	(3.75)	(0.25)	(2.41)	(4.71)	(0.47)	(2.78)
1% Decile	-13.89	-17.70	3.81	-11.28	-13.57	2.29
25% Decile	-1.64	-2.25	0.86	-1.57	-2.39	0.82
Median	1.30	0.63	0.67	1.30	0.64	0.67
75% Decile	3.68	3.39	0.29	3.60	3.31	0.29
99% Decile	12.43	11.61	0.82	10.24	9.86	0.38
Std	0.051	0.054		0.042	0.044	
Skewness	-0.43	-0.61		-0.55	-0.65	
Kurtosis	9.16	10.57		3.69	3.91	
N	557	547		545	537	

Panel B replicates Santa-Clara and Valkanov (2003) in the case of divided (46 years) and unified (45 years) US governments. It reports mean excess and real returns of the value-weighted and equal-weighted portfolios for unified and divided governments, VWR-TBL, VWR-INF, EWR-TBL, EWR-INF as well as TBL-INF during periods of unified (DDD or RRR) and divided governments. All rates are represented in annualized percentage points (from January 1927 until December 2017). The coefficients represent mean returns during each configuration and the p-values that are presented below are calculated using the standard errors from Newey-West procedure to account for heteroskedasticity and serial correlation. The lag that we used is equal to 6. To check robustness, 2 equal sub-periods are presented. In particular, we consider the periods from January 1927 until June 1972 and July 1972 until December of 2017.

Panel B - Average Returns under Unified and Divided Government

	27:01-17:12			27:01-72:06			72:07-17:12		
	DIV	UN	Diff	DIV	UN	Diff	DIV	UN	Diff
VWR-TBL	0.76	10.71**	9.95**	-4.03	11.18**	15.21**	2.77	9.57**	6.80
	(0.25)	(3.75)	(2.41)	(0.59)	(2.94)	(1.96)	(0.89)	(2.87)	(1.49)
VWR-INF	2.63	10.30**	7.68*	-2.27	10.88**	13.15*	4.68	8.93**	4.25
	(0.89)	(3.58)	(1.87)	(-0.35)	(2.83)	(1.77)	(1.48)	(2.68)	(0.93)
EWR-TBL	-0.87	17.50**	18.37**	-5.77	16.64**	22.41**	0.12	19.57**	18.38**
	(0.23)	(4.19)	(3.29)	(-0.70)	(2.97)	(2.25)	(0.30)	(4.26)	(3.03)
EWR-INF	0.10	17.10**	16.10**	-4.0	16.3**	20.3**	3.10	18.93**	15.83**
	(0.27)	(4.11)	(2.90)	(-0.50)	(2.93)	(2.10)	(0.77)	(4.18)	(2.62)
TBL-INF	-0.4	1.87**	2.27**	-0.3	1.7*	2.0*	-0.63	1.9**	2.5**
	(-0.78)	(4.41)	(3.42)	(-0.42)	(1.76)	(1.68)	(-1.59)	(4.45)	(4.34)
T	552	540		162	384		390	156	

We repeat the same procedure for presidencies from 1927 until 2017. In particular we consider the same regression:

$$\widetilde{r}_{t+1} = \alpha + \beta_1 \pi_t + \widetilde{u}_{t+1}$$

with the only difference than π_t is now

$D_t = 1$ if a Democrat president is in office at time t; $D_t = 0$ otherwise.

$R_t = 1$ if a Republican president is in office at time t; $R_t = 0$ otherwise.

The results that we find are very similar to the ones by Santa-Clara and Valkanov (2003) and Pastor and Veronesi (2017) and are displayed in the following panel.

Panel C - Average Returns under Democrat and Republican President

	27:01-17:12			27:01-72:06			72:07-17:12		
	REP	DEM	Diff	REP	DEM	Diff	REP	DEM	Diff
VWR-TBL	0.17	10.72**	10.56**	-0.45	11.19**	11.64	0.6	10.08**	9.48**
	(0.05)	(4.23)	(2.53)	(-0.07)	(2.07)	(1.60)	(0.16)	(3.69)	(2.07)
VWR-INF	2.84	9.71**	6.87*	3.18	9.39**	6.20	2.61	10.16**	7.55
	(0.87)	(3.74)	(1.65)	(0.54)	(2.35)	(0.88)	(0.69)	(3.70)	(1.63)
EWR-TBL	0.06	15.70**	15.63**	-2.63	18.00**	20.62**	1.93	12.50**	10.59*
	(-0.25)	(4.22)	(3.34)	(-0.36)	(3.03)	(2.19)	(0.39)	(3.27)	(1.70)
EWR-INF	2.74	14.69**	11.94**	1.01	16.19**	15.19	3.94	12.59**	8.64
	(0.66)	(3.85)	(2.13)	(0.14)	(2.70)	(1.64)	(0.13)	(3.38)	(1.40)
TBL-INF	-1.02**	2.68**	3.69**	-1.80**	3.64**	5.44**	0.08	2.01 **	1.93**
	(-2.18)	(6.30)	(5.85)	(-2.50)	(5.09)	(5.36)	(0.20)	(4.03)	(2.97)
T	518	574		212	334		306	240	

From 1927 until 1947, 3 major events happened which worth mentioning. The first 2 are Great Depression and World War II. These can be considered as tail events and thus it would be prudent to see whether the results above hold without them. The third event is constitutional and is called the "*20th amendment*". It was adopted on January 23, 1933. The amendment was introduced in order to decrease the so called "lame duck" period, which is defined as the period served by the president and the congress after an election but before the end of the terms of those that were not re-elected. Under section 1 of the amendment "The terms of the President and Vice President shall end at noon on the 20th day of January, and the terms of Senators and Representatives at noon on the 3rd day of January, of the years in which such terms would have ended if this article had not been ratified; and the terms of their successors shall then begin."[3]. So, since after the amendment, congressional terms start before presidential ones, it becomes clear that

[3]see https://constitution.congress.gov/browse/amendment-20/ for more details

the new incoming congress would hold a possible election in case that no presidential candidate gets the majority of the electoral vote. Before the amendment, new members of Congress and the new president had to wait until March 4 of the upcoming year. This was done in order to give them sufficient time to settle their affairs in their home states as well as to travel to Washington D.C. The problem of distance was no longer a problem by the first quarter of the 20th century. Furthermore, six months of waiting were considered a very long period. For example, by looking what happened to the 72th congress, we will see that almost a quarter of the its members were not re-elected due to the Great Depression. However, the new members of the Congress (as well as new president Roosevelt) had to wait a considerable amount of time to start governing.

For the above reasons, we run the same regressions from January 1947 until December 2017 and we find very similar results for both cases. These are presented in Panel D, below.

Panel D - Div. vs Un. Government - Rep. vs Dem. President : Post WWII Period

	47:01-17:12			47:01-17:12		
	DIV	UN	Diff	REP	DEM	Diff
VWR-TBL	3.10	10.78**	7.68**	2.57	9.84**	7.27**
	(1.21)	(4.47)	(2.18)	(0.87)	(4.68)	(2.00)
VWR-INF	4.53	10.93**	6.40*	4.35	9.87**	5.52
	(1.74)	(4.55)	(1.80)	(1.45)	(4.68)	(1.50)
EWR-TBL	1.19	18.03**	16.84**	2.86	12.92**	10.06**
	(0.35)	(5.56)	(3.62)	(0.72)	(4.41)	(2.05)
EWR-INF	2.63	18.18**	15.55**	4.64	12.95**	8.31*
	(0.78)	(5.66)	(3.35)	(1.17)	(4.47)	(1.70)
TBL-INF	0.15	1.44**	1.29**	0.03	1.78**	1.75**
	(0.44)	(3.80)	(2.50)	(0.08)	(4.99)	(3.31)
T	524	364		432	456	

3.2 Is it the President, the Government, or both?

In the previous section, we defined two political variables. The first one is the unified dummy and the second the democrat one. These two dummies are 72,5% of the time the same. In particular, for a total period of 91 years, democrat president with a unified government was in the office 34 years and a republican president with divided government was in the office for 32 years. In this section, we investigate which of the two (correlated) variables is more important. If democrat presidents are associated with higher returns than republican ones, then we would expect that republican presidents with unified governments are associated with lower returns than democrat presidents with divided governments. However, for every case that we consider, we find exactly the opposite. For example, the average annual excess return of the value weighted portfolio under republican president with a divided government is higher (9.86%) than under democrat president with a divided government (9.61%). The results are shown in Panel E. The same results are even more striking when we consider average excess and real returns for the equal-weighted portfolio (see Panels G and H). For example, the real average return for the equal-weighted portfolio under is republican president with a unified government is almost 8% higher than the real average return under is republican president with a divided government (13.33% to 5.76%).

Panel E - Average Returns under Different Schemes (VWR-TBL)

	Dem Pr.	Rep Pr.	Total	Difference
Unif Gov	11.08 (34 years)	9.86 (11 years)	10.71** (45 years)	1.26
			(3.75)	(0.20)
Div Gov	9.61 (14 years)	-3.26 (32 years)	0.76 (46 years)	13.2**
			(0.25)	(2.61)
Total	10.72** (48 years)	0.17 (43 years)		
	(4.43)	(0.05)		
Difference	1.21	13.1**		
	(0.26)	(1.96)		

Panel F - Average Returns under Different Schemes (VWR-INF)

	Dem Pr.	Rep Pr.	Total	Difference
Unif Gov	9.69 (34 years)	12.30 (11 years)	10.30** (45 years)	2.61
			(3.58)	(0.41)
Div Gov	9.76 (14 years)	-0.53 (32 years)	2.63 (46 years)	10.3**
			(0.89)	(2.05)
Total	9.71** (48 years)	2.84 (43 years)		
	(3.74)	(0.87)		
Difference	0.06	12.93*		
	(0.01)	(1.95)		

Panel G - Average Returns under Different Schemes (EVW-TBL)

	Dem Pr.	Rep Pr.	Total	Difference
Unif Gov	19.77 (34 years)	10.83 (11 years)	17.50**(45 years)	7.33
			(4.19)	(0.85)
Div Gov	5.86 (14 years)	-3.84 (32 years)	-0.87 (46 years)	10.33
			(0.23)	(1.54)
Total	15.70** (48 years)	0.06 (43 years)		
	(4.22)	(0.25)		
Difference	13.90**	16.91*		
	(2.06)	(1.94)		

Panel H - Average Returns under Different Schemes (EWR-INF)

	Dem Pr.	Rep Pr.	Total	Difference
Unif Gov	18.38 (34 years)	13.33 (11 years)	17.10**(45 years)	3.44
			(4.11)	(0.40)
Div Gov	5.76 (14 years)	-1.10 (32 years)	0.10 (46 years)	7.48
			(0.27)	(1.12)
Total	14.69** (48 years)	2.74 (43 years)		
	(3.85)	(0.66)		
Difference	12.62*	16.66*		
	(1.87)	(1.94)		

In order to investigate which dummy variable is more important, we run the following regression for both, the value weighted portfolio as well as the equal-weighted one:

$$\widetilde{r}_{t+1} = \alpha + \beta_1 D_t + \beta_1 U_t + \widetilde{u}_{t+1}$$

By considering excess average returns of the value weighted portfolio (Panel I) we find

that for the whole period of 91 years, both dummies remain (weakly) statistically significant. However, by considering a period (1947-2017) without the tail events mentioned before, we see that the democrat coefficient loses significance, while the coefficient of the unified dummy remains (weakly) statistically significant.

Panel I - VWR - Unified and Democrat Dummies as Regressors

	27:01-17:12	47:01-17:12
Intercept	-0.0159	0.0012
	(-0.476)	(0.4719)
Unified Dummy coeff.	0.0055*	0.0047*
	(1.6637)	(1.6860)
Democrat Dummy coeff.	0.0766*	0.0508
	(1.9056)	(1.4613)

The results are even more impressive when we consider the case of the average excess returns of the equally weighted portfolio (see Panel J). For the whole time horizon of 91 years, the coefficient of the unified dummy is statistically significant and the coefficient of the democrat dummy is (weakly) statistically significant. For the time horizon without the tail events (1947-2017), the unified dummy coefficient becomes even more significant (p-value is equal to 0.0003) while the democrat dummy coefficient becomes insignificant (t-stat equals 0.89).

Panel J - EWR - Unified and Democrat Dummies as Regressors

	27:01-17:12	47:01-17:12
Intercept	-0.0031	-0.0001
	(-0.894)	(-0.0343)
Unified Dummy coeff.	0.0119**	0.0126**
	(2.6802)	(3.3947)
Democrat Dummy coeff.	0.0078*	0.0035
	(1.7459)	(0.8899)

3.3 Varying Risk

One might think that a very plausible plausible explanation for the differences in excess returns would be compensation for risk. We show that this is not the case. In particular, we use the procedure defined in French et al. (1987) in order to compute the monthly volatility of the value-weighted portfolio return (VOL_t). Daily returns were obtained by CRSP. Then we run the following regression.

$$VOL_t = \beta_1 UN_t + \beta_2 DIV_t + \widetilde{u}_{t+1} \tag{2}$$

where UN and DIV are defined as in 3.1.

What we find is in the opposite direction. In particular, we find that risk during democrat periods is lower than risk during republican periods. The same occurs when we consider unified versus divided governments. Unified governments are associated with lower volatility, despite the fact that are associated with higher returns. Furthermore, for the post WWII period, this difference becomes significant.

Panel K - Volatility.UN vs DIV. Lag=4 (Newey-West test)

	REP	DEM	Diff	DIV	UN	Diff
1927:01-2017:12	15.82**	14.87**	-0.95	15.88**	14.78**	-1.12
	(16.47)	(19.51)	(-0.86)	(20.78)	(19.25)	(-1.03)
1927:01-1972:06	16.94**	15.20**	-1.73	16.84**	15.47**	-1.37
	(9.87)	(14.61)	(-0.86)	(8.55)	(15.22)	(-0.61)
1972:07-2017:12	15.02**	14.41**	-0.61	15.46**	13.05**	-2.41**
	(18.14)	(19.75)	(-0.55)	(22.23)	(15.13)	(-2.17)
1947:01-2017:12	14.07**	12.89**	-1.18	14.72**	11.59**	-3.12**
	(22.73)	(23.98)	(-1.43)	(26.69)	(21.42)	(-4.04)
T	432	456		524	364	

3.4 Real GDP Growth Rates

Blinder and Watson (2016) highlights that the US economy has performed better when a democrat president of the United States is in office rather than a Republican. This pattern is regardless of how one measures performance.

By using real GDP data from 1889 until 2016 from Owyang et al. (2013), we test whether this pattern still holds. From 1889 until 2016 as well as from 1900 until 2016 it does not. It does not even hold for different subsamples. The main reason that this result does not hold is that the pre-WWII period is characterized by high volatility (the standard deviation of the quarterly growth rate is 12.4 percent). Thus $t-stats$ are lower. We also investigate whether a unified government is associated with higher real GDP growth for the same periods. It does for both periods. The results are very robust for all different sub-samples. We see that, despite the high pre-WWII volatility, the difference of real growth rates between unified and divided governments remains

economic and statistical significant. This can be seen in Panel L. We also check a period with lower volatility (1947 until 2016). For this periods, both coefficients are statistically significant.

Panel L - Annual Average Real GDP growth for different schemes

	REP	DEM	Diff	DIV	UN	Diff
1900:01-2016:12	2.66**	4.67**	2.01	2.09	4.75**	2.66**
	(3.91)	(4.69)	(1.64)	(3.64)	(5.59)	(2.59)
1900:01-1958:12	2.68**	5.65**	2.96	-0.07	5.08**	5.16**
	(2.08)	(2.99)	(1.29)	(-0.05)	(4.79)	(2.84)
1958:07-2016:12	2.63**	3.69**	1.06*	2.73**	3.96**	1.22**
	(5.90)	(8.44)	(1.69)	(7.29)	(8.19)	(2.00)
1947:01-2016:12 - Post WWII	2.56**	3.93**	1.37**	2.63**	4.22**	1.60**
	(6.71)	(8.90)	(2.35)	(7.92)	(8.60)	(2.69)
1889:01-2016:12	2.86**	4.49**	1.63	2.18	4.67**	2.49**
	(4.50)	(4.75)	(1.43)	(4.06)	(5.76)	(2.56)
1889:01-1952:12	3.22**	5.20**	1.97	0.59	5.06**	4.46**
	(2.52)	(3.06)	(0.92)	(0.35)	(4.96)	(2.27)
1953:01-2016:12	2.54**	3.69**	1.15*	2.65**	3.78**	1.13*
	(6.53)	(8.44)	(1.96)	(7.58)	(7.60)	(1.86)

The above results indicate that for a long period of time, real GDP growth gap associated with democrat - republican presidents is not statistically significant. For shorter periods, the gap becomes significant. The plausible question would be which dummy variable is more important, the unified dummy or the presidential one? Thus we run the following regression:

$$\widetilde{g}_{t+1} = \alpha + \beta_1 D_t + \beta_1 UN_t + \widetilde{u}_{t+1}$$

where $\widetilde{g}_{t+1}$ is the growth rate. The results are shown below, in panel M. In particular in two of the three time horizons considered, democrat dummy coefficient is not significant, when in all cases the unified dummy coefficient is significant.

Panel M - Real Growth rate - Unified and Democrat Dummies as Regressors

	1889:01-2016:12	1900:01-2016:12	1947:01-2016:06
Intercept	1.804**	1.629**	2.350**
	(2.42)	(2.10)	(5.71)
Unified Dummy coeff.	2.233**	2.265**	1.21**
	(2.55)	(2.51)	(2.36)
Democrat Dummy coeff.	1.137	1.412	0.87*
	(1.06)	(1.26)	(1.69)

By considering real GDP growth rates from 1900 until 2016 (Panel N) and from 1889 until 2016 (Panel O), we find that democrats are not always associated with higher growth. In particular, we observe that for the whole sample, republican presidents with divided governments give on average an annual growth rate of 3.70% whereas a democrat president with a divided government is associated with an annual growth rate of 2.34%. However, when we consider divided versus unified governments, we find that unified governments are always associated with higher growth than divided ones.

Panel N - Average Growth under Different Schemes- 1900:01-2016:12

	Democrat President	Republican President	Total
Unified Government	5.60 (40 years)	3.51 (26 years)	4.75 (66 years)
Divided Government	2.33 (16 years)	1.96 (36 years)	2.09 (52 years)
Total	4.67 (56 years)	2.66 (62 years)	

Panel O - Average Growth under Different Schemes - 1889:01-2016:12

	Democrat President	Republican President	Total
Unified Government	5.43 (40 years)	3.70 (26 years)	4.67 (66 years)
Divided Government	2.34 (16 years)	2.10 (36 years)	2.18 (52 years)
Total	4.49 (56 years)	2.86 (62 years)	

4 Conclusion

In this paper, we document several stylized facts. First of all, unified governments are associated with higher excess returns than divided ones, when we consider the value-weighted portfolio. In particular, the difference is 9.95% in a period of 91 years. Secondly, the difference becomes even higher when we consider the equal-weighted portfolio. In that case the difference is 18.37%. Our analysis indicates that the effect of unified governments still persists when we add a presidential variable to the regression, and sometimes it dominates over the added variable. Thirdly, we show that the cause for these differences is not compensation for risk. In fact, volatility during a unified government is lower (and for post-WWII era significantly lower). Finally, using real GDP US growth data from 1889, we show that unified governments are also associated with higher GDP growth that divided governments. Current literature highlights that this is also true for democrat vs republican presidential variables for the period after 1930. However, we show that periods under democrat presidencies are not associated with higher real growth when sample size increases, that is from 1889 onwards.

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