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Still No Presidential Puzzle for the Stock Market

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The "presidential puzzle"—or whether a party holds a better track record in its time in power (and if so, why)—has recurrently attracted attention from economists. One contentious debate, in particular, is whether the stock market does better under Republicans or Democrats. Santa-Clara and Valkanov [2003] argue that there is a puzzle in the higher excess returns (but not volatility) observed under Democratic presidents that could not be explained away by the usual business cycle variables. Powell et al. [2007], however, responded in this journal by showing that the difference in average returns disappears once the persistence in the indicator variable has been accounted for. With monthly data, a typical presidential term would create a succession of 48 identical values for the dummy, creating a spurious regression problem.

The sample period considered by Powell et al. [2007] ends in 2004. Given the unusual collapses and rallies of the markets under the subsequent presidencies, the claims of Santa-Clara and Valkanov [2003] may have gained more statistical power; it is therefore worth re-evaluating their conclusions in light of 11 additional years of data. It appears that once taking into account the autocorrelation, stock markets do significantly worse under Republican presidents in the 1927–2015 sample, with a magnitude of –9.8% annualized. When accounting for even a modest multiple comparison correction, however, the null hypothesis of no difference between Democratic and Republican presidencies once again cannot be rejected.

FOUR MORE YEARS! (TIMES THREE)

The methodology used by Powell et al. [2007] offers a simple way to deal with the autocorrelation in the presidential dummy while still being able to use monthly returns. Under the assumption that stock returns follow an AR(1) process, and that the presidential party follows a Markov chain, one can generate simulated cutoffs for a 5% critical value. A Bonferroni correction with a factor of five is then applied, which is conservative given the potential for data mining when selecting the dependent return series and the way to measure the political indicator variable.[1] In practice, this correction is equivalent to requiring a 1% significance threshold in lieu of the usual 5%.

We proceed to updating the results from Powell et al. [2007]. The data are collected from the same sources. The main sample, 1927–2015, is obtained from the monthly Center for Research in Security Prices (CRSP) value-weighted index returns and 30-day T-bill rates. This is combined in longer samples with the historical data provided by Schwert [1990], going back to the 1956 presidential election—which arguably marks the origin of the main tenets of the current polarization in U.S. politics. Another subsample starts after the 1896 realignment of ideologies between the two parties. The crucial issue here is that the selection of the start date should not be arbitrary, as is too often the case in the literature on the subject.[2]

Exhibit 1 shows the summary statistics for the updated sample. Excess returns still exhibit autocorrelation of more

EXHIBIT 1
Summary Statistics (1927–2015)

	n	Mean	S.D.	AC(1)	AC(2)	AC(3)	AC(4)	AC(5)
VWR-TBL (Ann., %)	1068	5.857	18.73	0.1061	–0.01176	–0.08017	0.02587	0.07136
Republican dummy	1068	0.4719	0.4994	0.9822	0.9643	0.9465	0.9286	0.9108

Notes: Exhibit 1 shows the summary statistics for the excess return of the value-weighted index over the 30-day T-bill rate for the main sample. The mean and the standard deviation are in annualized terms.

EXHIBIT 2
Main Results

	α (ann., %)	t (α)	β (ann., %)	t (β)	R^2 (%)
Panel A: 1927–2015					
Estimate	10.5	4.239	–9.833	–2.377	0.4799
Lower cutoff	–0.2028	–0.06413	–9.118	–2.058	0.3501
Upper cutoff	11.78	4.131	8.884	1.992	
Lower cutoff (Bonferroni)	–2.538	–0.753	–11.95	–2.67	0.6722
Upper cutoff (Bonferroni)	13.89	4.869	12.09	2.633	
Panel B: 1857–2015					
Estimate	6.965	3.166	–3.806	–1.304	0.04446
Lower cutoff	0.062	0.02157	–6.005	–1.964	0.1745
Upper cutoff	9.422	4.109	5.934	1.944	
Lower cutoff (Bonferroni)	–1.614	–0.6692	–7.707	–2.516	0.3445
Upper cutoff (Bonferroni)	11.12	4.831	8.039	2.617	
Panel C: 1897–2015					
Estimate	8.907	3.886	–5.833	–1.727	0.1533
Lower cutoff	0.4376	0.1614	–7.358	–2.051	0.2609
Upper cutoff	10.92	4.433	7.238	2.029	
Lower cutoff (Bonferroni)	–1.094	–0.3977	–9.709	–2.705	0.4992
Upper cutoff (Bonferroni)	12.78	5.2	9.633	2.68	

Notes: Exhibit 2 shows the regression results for the main sample and two longer samples. The estimate model is of the form $r_m = \alpha + \beta \mathbb{I}$ *(Republican)* $+ \varepsilon$, *where the dependent variable is the value-weighted monthly excess returns over the 30-day T-bill rate. The estimated coefficients are presented with the simulated cutoff values at the 5% level, as well as with a Bonferroni multiple comparison adjustment assuming five potential variables have been examined. The t-statistics are Newey-West with 6 lags.* R^2 *denotes the adjusted* R^2.

than 10%, and in excess of 98% for the dummy variable (with a very slow higher-order decay). These are the two ingredients creating the spurious regression problem explained by Ferson, Sarkissian, and Simin [2003].

Exhibit 2 shows the estimates of the coefficients and 5% confidence intervals. The main post-1926 sample, shown in Panel A, does show an effect outside the confidence bounds if one ignores the data-mining bias. With the Bonferroni correction, however, the effect does not subsist. The longer samples in Panels B and C show no significant effect even before accounting for data mining.

An alternative methodology is to consider four-year returns. It has the disadvantage of reducing the number of data points, which justifies using only longer samples in that configuration. Exhibit 3 shows the results for the four-year returns (three years for the last period, 2012–2015). The estimated negative coefficients for Republican presidencies fall within the cutoffs once again, with or without the Bonferroni correction.

These updated results suggest that despite the sharp market collapse during the second term of President George W. Bush and the subsequent market rally during the two terms of President Barack Obama, there is still insufficient statistical evidence of a presidential puzzle.

REHABILITATING THE PRESIDENTIAL DUMMY?

Some recent studies have attempted to rehabilitate the presidential puzzle. Sy and Al Zaman [2011] maintain that Powell et al. [2007] are unfairly dealing with the original claims of Santa-Clara and Valkanov [2003];

EXHIBIT 3
Four-Year Returns

	α (ann., %)	t (α)	β (ann., %)	t (β)	R^2 (%)
Panel A: 1857–2015					
Estimate	7.033	3.527	–3.874	–1.389	0.8645
Lower cutoff	0.3737	0.1826	–6.564	–2.472	6.345
Upper cutoff	9.273	6.029	6.417	2.491	
Lower cutoff (Bonferroni)	–1.17	–0.551	–8.62	–3.491	12.07
Upper cutoff (Bonferroni)	11	8.066	8.503	3.462	
Panel B: 1897–2015					
Estimate	8.955	5.881	–5.881	–2.198	4.143
Lower cutoff	1.097	0.4913	–7.377	–2.67	7.991
Upper cutoff	10.46	7.144	7.442	2.659	
Lower cutoff (Bonferroni)	–0.645	–0.27	–9.957	–3.887	15.73
Upper cutoff (Bonferroni)	12.39	9.232	10.14	3.715	

Notes: Exhibit 3 shows the regression results for the two longer samples with four-year returns. The estimate model is of the form $r_m = \alpha + \beta \mathbb{I}$ *(Republican)* $+ \varepsilon$*, where the dependent variable is the value-weighted excess returns over the 30-day T-bill rate. The estimated coefficients are presented with the simulated cutoff values at the 5% level, as well as with a Bonferroni multiple comparison adjustment assuming five potential variables have been examined. The t-statistics are Newey-West with 6 lags.* R^2 *denotes the adjusted* R^2*.*

they make two arguments. First, the pre-1926 sample may not be relevant because both parties' ideologies changed too much before that date, which is certainly a relevant political science question. The market structure itself has also changed dramatically, with the early stock indexes being concentrated in a handful of large firms. Either way, Powell et al. [2007] reject the idea that there is a difference in any setting, including in the post-1926 sample only. Therefore, even if dismissing the longer samples on the basis of the structural changes, the findings of Powell et al. [2007] still hold in the shorter samples. It is therefore difficult to believe that the overall market does significantly better under Democrats.

Second, Sy and Al Zaman [2011] argue that controlling for the market factor is enough to eliminate the error term autocorrelation. However, this is only possible when using portfolio returns rather than market-wide returns that are part of the Santa-Clara and Valkanov [2003] tests. In their own analyses on portfolio returns, Sy and Al Zaman [2011] do not find a significant effect for the presidential dummy for the vast majority of the portfolios, after controlling for market returns. Furthermore, their approach does not attempt to mitigate the data-mining concerns in any way.

FUZZY MATH

All in all, the evidence to date does not suggest that presidential affiliation translates into a significant change in the performance of the stock market, at least in the straightforward way described by Santa-Clara and Valkanov [2003]. Of course, the absence of the presidential puzzle for the stock market does not necessarily imply that there could not be a puzzle for other aspects of the economy. Blinder and Watson [2013], for instance, note that for recessions (according to the NBER), 41 out of 49 quarters occurred under a Republican president.

In the bigger picture, the literature provides substantial evidence of a feedback loop between elections and the macroeconomy. The economic environment influences voting patterns, and a new administration's policy changes affect the economy.

While the presidential puzzle remains a popular and recurring subject of discussion, it appears that most literature has moved on to subtler claims about the interaction of the governmental regime and the economy. Given the constraints of the presidential sample, in particular its limited length, the risk of data-mined results is real—and thus any conclusion on this topic will undoubtedly bring out a flurry of passionate political reactions.

ENDNOTES

[1]Santa-Clara and Valkanov [2003] themselves recognize that they "also tried other variables related to the party in control of Congress" (p. 1857), yet that a Bonferroni correction would make at least some of the results disappear.

[2]For instance, the reason for Santa-Clara and Valkanov [2003] to start in 1927 is far from fundamental: it has to do with the lack of availability of some of their control variables before that date. However, our results hold even in a sample starting in 1927.

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