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A Preliminary Analysis of the Presidential Approval Rating

by

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Abstract.

This study empirically investigates whether the performance of the S&P 500 stock index, whose performance is treated as a surrogate for the performance of domestic stock/equity markets generally, influences the Presidential approval rating. After allowing for a variety of political factors and economic factors in addition to the S&P 500 stock index, it is found that the Presidential approval rating is indeed significantly enhanced by increasing values for this indicator of equity performance.

Introduction

In addition to receiving extensive attention in the various news media, the topic of Presidential approval ratings has received considerable attention in the scholarly literature [e.g., Mueller (1973), Monroe (1984), Edwards (1991; 1998), Clarke and Stewart (1994), Campbell and Mann (1996), King (1999), Erikson, MacKuen, and Stimson (2000), Jones (2001), Cohen (2003), Abramowitz (2004), Canes-Wrone (2004), and Yaffee (2004)]. Moreover, several of these studies have expressly endeavored to link Presidential approval ratings to Presidential re-election prospects [e.g., Campbell and Mann (1996), Jones (2001), and Abramowitz (2004)].

The present study seeks to ascertain whether the performance of the S&P 500 stock index, whose performance is treated in this study as a surrogate for the performance of domestic equity markets generally, influences the Presidential approval rating. Since the Presidential approval rating is regarded as a very significant predictor of Presidential re-election prospects, it would seem useful to determine whether, if at all, the performance of the S&P 500 stock index influences this approval rating. A simple model establishes the framework for the empirical analysis, an analysis that includes a variety of economic and non-economic factors. The empirical analysis follows, with the Conclusion then providing a summary of the results of the study.

The Model

The public's approval rating of the President (APP) is hypothesized to be an increasing function of the public's *positive perceptions* (POSPERC) of the

President/Administration and a decreasing function of the public's *negative perceptions* (NEGPERC) of the President/Administration:

$$APP = f(\text{POSPERC}, \text{NEGPERC}), f_{\text{POSPERC}} > 0, f_{\text{NEGPERC}} < 0 \quad (1)$$

Positive public perceptions of the President are hypothesized to be an increasing function of the President's (or Administration's) perceived *successes* while in office, as well as the President's (or Administration's) perceived *positive character traits* while in office. Conversely, *negative* public perceptions of the President are hypothesized to be an increasing function of the President's (or Administration's) perceived *failures* while on office, as well as the President's (or Administration's) perceived *negative character traits* while in office. The public's assessments falling within these two broad categories of perceptions can be further defined so as to provide *measurable* variables that can be investigated for their influence over the Presidential approval rating.

To begin, this study follows Mueller (1973) and Schlesinger (2004) by considering the potential influence of war on Presidential approval ratings. A President embarking on or conducting a "popular" war can be expected to experience higher approval ratings, *ceteris paribus*. On the other hand, a President embarking on or conducting an unpopular or highly controversial war may very well expect to experience lower approval ratings, *ceteris paribus* [King (1999), Putnam (2000), Yaffee (2004)]. In this context, it is hypothesized that, *ceteris paribus*, the 1991 Persian Gulf War (GULF), given its popularity among the U.S. public as an international coalition to free Kuwait of an invading military force from Iraq and given the implications of a successfully conducted military campaign for protecting crude oil availability and crude oil prices on the one hand and for stabilizing the Middle East politically and militarily on the other hand, provided the President a boost in his approval ratings. This war may have all the more boosted the President's approval ratings because of how "easy" the victory was perceived by the public to be; indeed, the 1991 Persian Gulf War had been portrayed by the news media as potentially a militarily challenging endeavor, making the ease of victory that was actually experienced all the more impressive. By contrast, the Vietnam War (VIETNAM) was arguably the most unpopular war of the second half of the twentieth century for the U.S. Indeed, Putnam (2000, pp. 257, 146, 152) speaks of "...the trauma of Vietnam...", the experiences of riots, widespread demonstrations, "...the clamor for Vietnam draft deferments..." disruptions of national political nominating conventions, and the seemingly unending media coverage of the "carnage" that came in many respects to define this war. Such experiences would seem to imply strongly that the Vietnam War was a highly controversial and generally unpopular war [King (1999), Putnam (2000)]. Consequently, Presidents embarking on and/or perceived as perpetuating this war would be expected to experience a diminished public approval rating, *ceteris paribus*.

Since the President is regarded as the principal leader of the U.S. government, a course of action or behavior that embodies or projects either significant strength or weakness of character would likely influence the image of the President and hence the Presidential approval rating, *ceteris paribus*. One clear example of such an experience

would be that of impeachment of the President (IMPEACH). Two sitting Presidents over the study period have in fact been impeached by the U.S. House of Representatives: Richard M. Nixon, for his involvement in the Watergate scandal, which Putnam (2000, p. 187) associates with an increased "...disillusionment with public life..." and a societal "...slump in civil engagement...;" and Bill Clinton, for his alleged/apparent perjury involving a civil suit and for his sexual misconduct in the White House while in office (and, *de facto*, his public dishonesty regarding same). Regarding the IMPEACH variable, Yaffee (2004, p. 1) observes that "The Watergate scandal is one of the greatest political scandals in American political history." Indeed, Putnam (2000, p. 257) speaks of how Watergate became associated with a "...distrusting of institutions..." and a public sense of alienation from politics. In any case, it is hypothesized in this study that the public's approval rating of a President diminishes if he is in fact formally impeached [Putnam (2000), Yaffee (2004)], *ceteris paribus*.

Historically, economic issues have been the subject of debate both prior to and during Presidential primaries and during Presidential election campaigns. Arguably, economic factors that could plausibly play a role in the Presidential approval rating might include: (1) reduced federal personal income tax rates *per se*; (2) increased real (constant dollar) federal personal income tax exemptions; (3) perceived genuine efforts to reform the Internal Revenue Code; (4) decreases in the formal IRS audit rate; and (5) the performance of the major stock (equity) markets.

Reducing the average effective federal personal income tax rate (AVETAX), reduces the average household's federal personal income tax burden. Since the latter increases the personal disposable income for many segments of the taxpaying population (especially the "middle class", broadly interpreted), it is expected that these taxpayers would tend to respond to this policy by raising *their* Presidential approval rating, *ceteris paribus*.

As a practical matter, for actual or would-be taxpayers with relatively very modest (or low) incomes, cutting the average effective federal personal income tax rate may yield only limited perceived direct benefits. On the other hand, households with very modest incomes are likely to perceive clear and direct tax benefits when the real (constant dollar) federal personal income tax exemption (EXEMPTION) is increased, especially since they on the average have more exemptions per household unit than higher income households. Indeed, for those households with the lowest income levels, increased real personal exemptions in many cases may even remove them from federal personal income taxation altogether (although they may still face Medicare and social security tax liabilities, depending upon circumstances). Hence, increased real federal personal income tax exemptions yield benefits to lower (and, although to a lesser degree, middle) income households, who in turn would likely express a higher Presidential approval rating, *ceteris paribus*.

The Tax Reform Act of 1986 (TRA) was portrayed by the media and by leading politicians alike as a *genuine* effort to reform the Internal Revenue Code. As documented in Ott and Vegari (2003, p. 275), among other things, the TRA reduced the number of tax

brackets from 14 to three, increased the tax base by limiting tax deductions, reduced the marginal tax rates, and endeavored to "...improve fairness and efficiency..." in the Internal Revenue Code. The TRA also sharply reduced the tax benefits of limited partnerships, which was an effort to make the Internal Revenue Code more equitable as well, although it ultimately caused problems for the real estate industry [Sanger, Sirmans, and Turnbull (1990)] and the savings and loan industry [Barth (1991)]. To the extent that the public regarded the TRA as a genuine and effective initial effort at meaningfully reforming the Internal Revenue Code, it is hypothesized that the Presidential approval rating would be enhanced, *ceteris paribus*.

As a rule, individual taxpayers must annually report their taxable income to the IRS on their personal federal income tax returns. Since some taxpayers choose not to report all of their taxable income to the IRS, the IRS is confronted with the ongoing challenge of income tax evasion. In point of fact, income tax evasion annually reduces Treasury tax receipts by tens of billions of dollars, although estimates of the magnitude of the full extent of this problem vary widely, depending upon the technique adopted to quantify the revenue losses [Tanzi(1982), Feige (1994), Cebula (1997; 2004), Ledbetter (2004)]. If the IRS audit rate rises, i.e., if the percentage of income tax returns *formally audited* by IRS personnel increases, so do the risks and costs (both pecuniary and non-pecuniary) associated with income tax evasion. However, even for persons who do not intentionally underreport their taxable income or persons who do not underreport their income at all, increases in the percentage of personal income tax returns formally audited by IRS agents may impose costs. For example, in the latter case, the affected households incur costs in terms of time and effort to locate and provide various forms of documentation for income and /or deductions, as well as time and effort (along with stress) and perhaps even the pecuniary costs of retaining an accountant, income tax preparation specialist, or tax attorney to meet with an IRS agent. Indeed, these sorts of costs would tend to be applicable for *any* household subjected to a formal IRS audit. Therefore, it follows that the smaller the percentage of personal income tax returns formally audited by IRS personnel, the lower the actual or potential pecuniary and non-pecuniary costs of IRS audits to the public and hence the more likely the public is to respond favorably in their assessments of the President's job approval, *ceteris paribus*.

Finally, there is the issue of stock market performance. Equity ownership on the major U.S. stock exchanges is not only enormous in magnitude but also broad-based. That is, aside from the extremely broad variety of institutional forms that own equity stock shares, there is a large proportion of the U.S. population that also owns such equity shares. Indeed, many of the nation's largest pension plans are also deeply committed to ownership of equity issues. Accordingly, the better the performance of the equity markets, the better the financial status of a huge portion of the U.S. populace. Using performance of the S&P 500 stock index as the surrogate for the performance of U.S. equity markets in general, it is hypothesized that the better the performance of the real (constant dollar) S&P 500 stock index (S&P), the higher the Presidential approval rating, *ceteris paribus*.

Based upon the framework developed above, the model of the Presidential approval rating is hypothesized to take the following form:

$$\begin{aligned}
 APP &= f(\text{GULF}, \text{VIETNAM}, \text{IMPEACH}, \text{AVETAX}, \text{EXEMPTION}, \text{TRA}, \text{AUDIT}, \\
 &\text{S\&P}), \\
 f_{\text{GULF}} &> 0, f_{\text{VIETNAM}} < 0, f_{\text{IMPEACH}} < 0, f_{\text{AVETAX}} < 0, f_{\text{EXEMPTION}} > 0, f_{\text{TRA}} > 0, \\
 f_{\text{AUDIT}} &< 0, f_{\text{S\&P}} > 0
 \end{aligned} \tag{2}$$

Empirical Analysis

Based on the framework provided in equation (2), the following model is to be estimated:

$$\begin{aligned}
 APP_t &= a_0 + a_1 \text{GULF}_t + a_2 \text{VIETNAM}_t + a_3 \text{IMPEACH}_t + a_4 \text{AVETAX}_{t-1} \\
 &+ a_5 \text{EXEMPTION}_{t-1} + a_6 \text{TRA}_t + a_7 \text{AUDIT}_{t-1} + a_8 \text{S\&P}_{t-1} + u
 \end{aligned} \tag{3}$$

where:

APP_t = the average Presidential approval rating in year t ;

a_0 = constant;

GULF_t = a binary (dummy) variable to indicate the year during which the 1991 Gulf War was materially conducted: $\text{GULF}_t=1$ for 1991 and $\text{GULF}_t=0$ otherwise;

VIETNAM_t = a binary variable to indicate the principal years during which the U.S. was significantly militarily involved in the Vietnam War: $\text{VIETNAM}_t = 1$ for those years (1965-1973) and $\text{VIETNAM}_t = 0$ otherwise;

IMPEACH_t = a binary variable to indicate the years during which a sitting President was impeached by the U.S. House of Representatives: $\text{IMPEACH}_t = 1$ for 1974 and 1997 and $\text{IMPEACH}_t = 0$ otherwise;

AVETAX_{t-1} = the average effective federal personal income tax rate in year $t-1$, as a percentage;

EXEMPTION_{t-1} = the value of the federal personal income tax exemption in year $t-1$, expressed in 1996 dollars;

AUDIT_{t-1} = the percentage of filed federal personal income tax returns formally audited by IRS personnel in year $t-1$;

TRA_t = a binary variable to reflect the year in which the Tax Reform Act of 1986 was enacted;

S\&P_{t-1} = the average real value of the S&P 500 stock index in year $t-1$, expressed in 1996 dollars;

u = stochastic error term.

Presidential approval ratings have been systematically gathered for several decades. The numerical range for the approval rating lies between 0.00 and 100.00. Over the 1960-1997 study period, the average Presidential approval rating was 53.95, with a standard deviation of 11.11. According to the ADF (augmented Dickey-Fuller) and P-P (Phillips-Peron) unit root tests, over the study period, the variables APP and $EXEMPTION$ are stationary in levels, but the variables $AVETAX$, $AUDIT$, and $S\&P$ are

stationary only in first differences. Accordingly, the latter three variables are expressed in first differences form in the estimation.

Adopting the Newey-West heteroskedasticity correction, the OLS estimate of equation (3) is given by the following:

$$\begin{aligned}
 APP_t = & 38.7 + 16.67 GULF_t - 8.67 VIETNAM_t - 19.36 IMPEACH_t \\
 & \quad (+8.86) \quad \quad (-2.00) \quad \quad \quad (-6.43) \\
 & - 3.18 qAVETAX_{t-1} + 0.196 EXEMPTION_{t-1} + 11.27 TRA_t \\
 & \quad (-1.05) \quad \quad \quad (+8.12) \quad \quad \quad (+5.01) \\
 & - 2.87 qAUDIT_{t-1} + 0.104 qS\&P_{t-1}, F = 4.07, DW = 1.91, Rho = 0.04 \quad (4) \\
 & \quad (-1.16) \quad \quad \quad (+2.35)
 \end{aligned}$$

where terms in parentheses are t-values and q is the first-differences operator.

In estimate (4), all eight of the explanatory variables exhibit the expected signs, with five of these being statistically significant at the three percent level or beyond and one being significant at beyond the six percent level. The estimated coefficients on the average effective federal personal income tax rate (AVETAX) and IRS audit rate (AUDIT) variables both fail to be statistically significant at even the ten percent level. The DW and Rho statistics indicate the absence of serial correlation problems. Finally, the F-ratio, which is statistically significant at the one percent level, attests to the overall strength of the model.

The coefficient on the GULF variable is positive and statistically significant at the one percent level, implying that a war that is “popular,” i.e., strongly supported overall by the American populace, increases the Presidential approval rating. By contrast, the Vietnam War variable, VIETNAM, exhibits a negative coefficient that is significant at the 5.5 percent level; thus, there is moderately strong empirical evidence that a highly unpopular and controversial war acts to lower the Presidential approval rating. Not surprisingly, the coefficient on the IMPEACH variable is negative and significant at the one percent level, implying that the public’s regard for/approval of the President deteriorates when his behaviors have been so extreme or unacceptable as to result in a formal Congressional impeachment. The estimated coefficient on the EXEMPTION variable is positive and significant at the one percent level, implying that increasing the *real* federal personal income tax exemption increases the public’s approval rating of the President, arguably at least in part because—especially at the lower end of the income spectrum—such a policy reduces the federal income tax burden. The coefficient on the TRA variable is positive and significant at the one percent level. Thus, it appears that the enactment of the Tax Reform Act of 1986 may have been perceived favorably by the general public as a genuine and effective effort to reform the Internal Revenue Code. In point of fact, this statute *did* make a number of substantive changes in the Code [Ott and Vegari (2003), Sanger, Sirmans, and Turnbull (1990)]. Finally, the estimated coefficient on the S&P 500 stock index variable (S&P) is positive and statistically significant at

roughly the 2.5 percent level. Thus, it appears that the better the performance of the S&P 500 stock index, the higher the public's approval rating of the President. Apparently, the populace raises its approval rating of the President when the equity markets are prospering.

Conclusion

Based on the empirical estimation in this study, it appears that over the 1960-1997 study period, the Presidential approval rating was positively and significantly impacted by the 1991 Gulf War (arguably, a surrogate for a "popular" war), increases in the real federal personal income tax exemption, the Tax Reform Act of 1986 (arguably, a surrogate for an effort to enact *genuine* tax reform), and the growth in (positive performance of) the S&P 500 stock index. In addition, the Presidential approval rating was negatively and significantly impacted by Presidential impeachment proceedings. Finally, there is also moderately significant evidence that the Vietnam War (as a surrogate for an "unpopular" war) negatively impacted the Presidential approval rating. These findings, which strongly suggest a positive and significant impact on the Presidential approval rating from well-performing equity markets, should prove relevant information for those interested in public perceptions of Presidential job performance and Presidential election forecasting.

Data Appendix/Sources

<http://www.geocities.com/americanpresidencynet/approval.html>

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