

Analyzing the economic policy uncertainty index and presidential rhetorical simplicity in the United States

Christopher Olds

*Visiting Lecturer, Department of Government & International Affairs,
University of South Florida*

E-mail: chris@chrisolds.com

ABSTRACT

Recent efforts by Baker, Bloom, and Davis (2013) make it possible to evaluate whether changes in economic policy uncertainty have any bearing on the actions taken by political officials. This current project assesses whether economic policy uncertainty in the United States compels the U.S. president to increase the linguistic and substantive simplicity of public remarks. In an attempt to either decrease rising economic policy uncertainty, or stop the occurrence of economic policy uncertainty altogether, the president can choose to discuss issues in a very simple way. Time series analyses of monthly information spanning between 1993 and 2013 indicate that an increase in the economic policy uncertainty index results in an increase in presidential rhetorical simplicity. This provides an initial indication that the rhetorical strategy of linguistic and substantive simplicity employed by presidents can be shaped by economic conditions.

Keywords: economic policy uncertainty index, presidential rhetoric, rhetorical simplicity, political communication, vector autoregression, moving average representation

JEL Classification: E02, E60, C22

1. Introduction. Recent research by Baker, Bloom, and Davis (2013) has created a dynamic measure of economic policy uncertainty in the United States. In their empirical analyses of this measure, they find that an increase in economic policy uncertainty in the United States has significant implications domestically, resulting in things like reductions in real industrial production, as well as in employment levels. One area not yet explored is whether shifts in economic policy uncertainty in the United States result in changes in behavior from the American president.

This is an important area to research, since save for those periods of international crisis, no other issue is discussed more by the president than the economy (Wood 2007). The reason for this is that the economy is the primary issue area used to gauge a president's policy performance and political success (Eshbaugh-Soha and Peake 2011, 135). The economy is a major aspect in shaping public opinion (Campbell et al. 1960). Citizens consistently describe concerns about the economy as the most important problem in the U.S. when responding to public opinion surveys (Wood 2007, 8). As a result, when U.S. economic performance changes, presidential approval ratings can shift (MacKuen, Erickson, and Stimson 1992).

Given that the economy plays such a major role in public perceptions of presidential performance, changes in economic policy uncertainty in the U.S. should have significant consequences on presidential behavior. The intention of this current project is to make an initial attempt at empirically evaluating whether changes in economic policy uncertainty have any bearing on the public communications strategy the president employs.

Research by Elvin T. Lim (2008) suggests that presidents will reduce the linguistic and substantive complexity of language in public communications to help make presidential rhetoric be more accessible to the common, everyday citizen. The proposal of this paper is that such changes in rhetorical style are influenced by the presence of economic policy uncertainty. This project then evaluates whether in the face of rising economic policy uncertainty, the president elects to simplify the style of language used when communicating with the public. Such a rhetorical strategy can be taken in an attempt to ease concerns and confusion regarding policies, in hopes that economic policy uncertainty declines over time. The president could be engaging in responsive political leadership in the face of economic cues in the environment; with rising economic policy uncertainty, the president simplifies public remarks in an effort to decrease the likelihood of higher economic policy uncertainty.

2. Literature review

2.1 A brief background on the economic policy uncertainty index. The economic policy uncertainty index developed by Baker, Bloom, and Davis (2013) was created as a way to evaluate the proposal that economic policy uncertainty hinders economic recovery following economic downturns. When economic policy uncertainty is present in the environment, major companies and everyday citizens alike should be less inclined to engage in meaningful investment and consumption.

Part of the reasoning for this is that high economic uncertainty in general gives firms the incentive to curb investment, as investment projects would be very costly to cancel (Bernanke 1983). In addition, when uncertainty about government policy itself is high, stock prices will decline, as stock prices will on average decline when policy changes are announced (Pastor and Veronesi 2012). Foreign direct investment from U.S. firms to

foreign affiliates declines during election cycles, suggesting uncertainty about the election outcome, and the potential consequences of the election outcome on economic policy, influences economic behavior (Julio and Yook 2014). Additionally, the work of Zhang and Wan (2004) suggests economic uncertainty has negative effects on household consumption, which means uncertainty about the economy can have implications on the economic decisions of individual citizens as well. Economic uncertainty can reduce consumption and increase savings within households.

The analyses of Baker, Bloom, and Davis (2013) reinforce some of these potential negative economic consequences with their findings that employ their original economic policy uncertainty index measure. Their empirical analyses find that an increase in the economic policy uncertainty index lowers investment, hiring, and industrial production. Economic policy uncertainty then has actual consequences for the economy.

The calculated economic policy uncertainty index for the United States is comprised of three elements. The first element is the number of mentions to policy-related economic uncertainty in several prominent American newspapers. The second element is the amount of federal tax code provisions that have the potential to expire. The third element is the amount of forecaster disagreement about government purchases and future inflation.

With the first element of the economic policy uncertainty index, the newspaper content analysis work evaluates the extent of uncertainty on a variety of fronts: who is actually making economic policy decisions, what specific economic policy actions will be taken, the time period in which specific economic policy actions will be taken, the consequences of policy decisions, and the possibility of inaction. The content analysis of newspaper coverage also involves concerns that are not explicitly economic, but still have a bearing on the economy, such as national security. All of this is made possible by scanning for keywords that include terms that pertain to uncertainty, the economy, and policy in some capacity.

For the second element of the economic policy uncertainty index, tax code expirations are evaluated by looking at the dollar value of expiring tax provisions over time. Scheduled tax code expirations can exacerbate uncertainty, because Congress will often wait until the near expiration date of a tax code to decide what to do.

With the third element of the economic policy uncertainty index, information from the Federal Reserve Bank of Philadelphia's Survey of Professional Forecasters is evaluated. The disparity of individual forecasts in survey responses serves as an indicator of uncertainty about future economic outcomes. The interquartile range of inflation rate forecasts are evaluated, as well as the interquartile range of forecasts about government purchases at the local, state, and federal levels.

With these three elements, Baker, Bloom, and Davis (2013) normalize each component by its own standard deviation, and then average the weighted components month by month. The result is a monthly indicator of the extent of economic policy uncertainty that can be used to empirically evaluate the consequences of dynamic changes in economic policy uncertainty.

2.2 A brief background on presidential rhetorical simplicity. One of the potential results of change in economic policy uncertainty is change in presidential rhetorical style. In particular, the linguistic and substantive simplicity of the language used by the president when communicating with the public might change in the face of fluctuations in economic policy uncertainty. The linguistic and substantive simplification of presidential rhetoric has been categorized by scholars such as Lim (2008) and Shogan (2007) as a way for the president to communicate with the public in a way that is more accessible to the average citizen. Lim (2008) in particular considers the strategy of linguistic and substantive simplification in presidential remarks as anti-intellectual. Anti-intellectualism is the “resentment and suspicion of the life of the mind and of those who are considered to represent it; and a disposition constantly to minimize the value of that life” (Hofstadter 1963, 7).

Lim proposes that the linguistic and substantive simplification of presidential rhetoric is an anti-intellectual approach that strives to avoid coming across as an elitist (Lim 2008, 20). Presidential administrations have, according to Lim, increasingly adopted the perspective that if a politician sounds like an everyday citizen of the country, they are showing “they are of the people and therefore for the people” (Lim 2008, 68). This greatly concerns Lim, since presidential rhetoric that is simplified, as demonstrated by the usage of language that is “syntactically truncated and semantically shortened,” could help to curtail any meaningful political policy discussion and deliberation (Lim 2008, 19). Due to this, Lim (2008) believes overly simplified language from the president offers very little information that can be used in policy argumentation and deliberation.

Lim (2008) empirically measures the extent of simplicity in presidential remarks through the usage of the Flesch readability formula. The Flesch readability formula is calculated through the following formula: $206.835 \text{ minus } (1.015 \text{ times the average sentence length}) \text{ minus } (84.6 \text{ times the average syllables per word})$. Such a measurement technique for gauging simplicity is considered legitimate, since research has shown that word and sentence length are strong predictors of linguistic complexity (Kintsch and Miller, 1981). The average sentence length is the number of words divided by the number of sentences, and the average number of syllables per word is calculated by dividing the number of syllables by the number of words. A higher Flesch readability score reflects greater linguistic simplicity, and, as Lim (2008) demonstrates, also reflects greater substantive simplicity.

As a part of his research, Lim (2008) contrasts the Flesch readability scores of linguistically complex texts (such as academic research papers) and linguistically simple texts (such as television program scripts). He finds that linguistically complex texts use more words that exhibit intellectual processing. Words that exhibit intellectual processing are those that suggest awareness or unawareness, similarity or difference, certainty or uncertainty, importance or unimportance, and the presence or absence of specific concepts or thought processes. These words are categorized through the Harvard-IV content analysis dictionary.

When using the same words categorized through the Harvard-IV content analysis dictionary when examining presidential rhetoric, Lim finds that presidents frequently refrain from the discussion of policy details, and also refrain from elaborating on why they adopt specific policy positions. So when the Flesch readability score of a set of

presidential remarks is high, this can also mean a dearth of words in presidential remarks that exhibit meaningful intellectual processing.

As presidents have increasingly offered linguistically simplified language, they simultaneously have offered substantively simplified language, using words that do not demonstrate much intellectual processing. In comparing both linguistically complex and linguistically simple remarks, Lim (2008) finds that linguistically complex text is also substantively complex text. As a result, the Flesch readability formula can be used as an indicator of both linguistic and substantive simplicity, and not just an indicator of linguistic simplicity.

Following his empirical analysis, Lim (2008) makes the normative argument that linguistically and substantively simplified presidential rhetoric has unfortunately deprived the public of policy discussion that deliberates alternative positions, which limits the ability of the public to engage in considered and reasoned political judgment. On this point, Lim (2008, 54) laments the following: “presidents have taken the rhetorical path of least resistance by serving up simplistic sentences...an easily digestible substantive menu devoid of argument and infused with inspirational platitudes, partisan punch lines, and emotional and human interest appeals.”

The aspect that Lim (2008) does not legitimately consider extensively in either his empirical or normative discussion of presidential rhetoric is the possibility that circumstances like high economic policy uncertainty within the country can potentially compel presidents to adopt more linguistically and substantively simplified presidential rhetoric. Lim (2008) does not take into account that the economic environment could compel the president to use linguistically and substantively simplified language in an attempt to quell concerns about the economic state of the nation.

If there is a rise in economic policy uncertainty in the country, strategic presidents can adopt linguistically and substantively simplified language in an attempt to lower doubts about the economic prospects of the country. Speaking plainly and in a straightforward manner is not necessarily an effort by the president to pander to the lowest common denominator of political discourse. The president could simply just be trying to speak in a way that will lessen confusion about the situation the country faces, and lower trepidation about the policy options that are available. In addition, strategic presidents could be responding to economic policy uncertainty with language that can be interpreted to mean the current environment is lacking complications or difficulties. The lack of detail with certain presidential remarks classified as overly simplified political language can potentially guide citizens and organizations into thinking that complex or troubling issues are not present currently, such that there is no need for anxiety or uncertainty about the economy in the first place.

3. Theory and Hypothesis. The proposal of this paper is that Lim (2008) is not giving a full account as to why a president would elect to use linguistically and substantively simplified language. Presidents can elect to use linguistically and substantively simplified language not to pander to the public, as is suggested throughout the work of Lim (2008), but rather to make an attempt to stem the tide against rising economic policy uncertainty, or try to prevent the growth of economic policy uncertainty from occurring at all.

Presidents use rhetoric to motivate people to think and behave differently, mobilize organizations and institutional bodies to behave in certain ways, and to inform citizens about the options the country has (Porter 2014, 517-518).

If the president's public remarks are linguistically and substantively complex, it will be more difficult for citizens, business firms, and government institutional bodies to quickly and easily figure out what the president is trying to say regarding the policy options the country has. Linguistically and substantively complex language can make it hard for many to grasp what is being recommended regarding the most appropriate course of action to take. Confusing citizens, business firms, and government institutional bodies as to what is the appropriate route to take with policy will only exacerbate economic policy uncertainty. Given that a major focus of the modern presidency is the economy, and the public frequently uses the status of the economy when making evaluations of the president (Wood 2007, 7), it is counterproductive for the president to use rhetoric that would help to heighten economic policy uncertainty.

The usage of simplified political language, language that communicates ideas in a very accessible and straightforward manner, is a tool in the president's rhetorical arsenal to combat against rising economic policy uncertainty. Linguistically and substantively simple language should be more conducive to a greater number of individuals, groups, and institutions understanding what the president thinks about the current sociopolitical environment. This type of language can potentially help to address unease about where things stand in the current and immediately foreseeable economy.

For the type of remarks that greatly concern Lim (2008, 54), those that are so high on linguistic and substantive simplicity that they lack any legitimate detail or ideas at all, the president might again be acting in a strategic fashion in relation to the economy. Language that is low on policy detail can potentially produce the belief that there is no pressing issue or cause for alarm in the economy.

To make an initial empirical attempt at evaluating the relationship between economic policy uncertainty and presidential rhetorical simplicity, the following research hypothesis will be evaluated:

Research hypothesis - A positive change in economic policy uncertainty significantly and positively predicts change in presidential rhetorical simplicity.

4. Methodology. When dealing with variables that are dynamic over time, the usage of time series analytical approaches are necessary. There are a variety of time series approaches to analyze dynamic information (for example, see Wongkhae et al. 2012, Chaithep et al. 2012, Van Nguyen 2013, Zhou and Jariyapan 2013, and Shen, Chokethaworn, and Chaiboonsri 2013). In this case, the techniques of vector autoregression and moving average representation are used. The reason for this is that these techniques are most appropriate to investigate whether changes in one variable can help to predict changes in the other variable, while simultaneously testing for the possibility of a multidirectional relationship between the two variables of interest.

These time series techniques allow us to see whether changes in economic policy uncertainty result in changes in presidential rhetorical simplicity, and also allow us to see whether changes in presidential rhetorical simplicity result in changes in economic policy uncertainty. Vector autoregression and moving average representation have been used in prior research on whether the president guides or responds to the sociopolitical

environment (e.g. Edwards and Wood 1999, Eshbaugh-Soha and Peake 2011, Olds 2013a, Olds 2013b, Olds 2013c, Olds 2013d, Wood 2007, and Wood 2009).

4.1 Vector Autoregression. The approach of vector autoregression (often abbreviated as VAR) is a multivariate application of the Box-Jenkins causal model. With vector autoregression models, all of the variables within the system are treated as endogenous variables. Each variable in the system is evaluated through past values of itself, as well as prior values of the other variables in the system. The inclusion of multiple lags (prior values of variables) in the vector autoregression helps to account for the inertial qualities each variable in the system might have (Sims 1980). Granger (1969) causality tests are performed in hypothesis testing. Through the usage of F-tests, Granger causality tests determine whether the lags of one variable can collectively predict the values of the designated endogenous variable. For the sake of this specific analysis, there are two endogenous variables in the system, the first being economic policy uncertainty, and the second being presidential rhetorical simplicity. Any concern about omitted variables within the VAR system is mitigated in part by the knowledge that the effects of any potentially omitted variable from the system are technically accounted for by the prior values of the endogenous variables in the VAR system (Eshbaugh-Soha and Peake 2011: 135).

A series of Engle-Granger tests are performed at various lag lengths to check whether the variables in the VAR system are cointegrated, meaning the variables share a common trend through time. If variables share a common trend across time, standard vector autoregression techniques should not be used, and a vector error correction model should instead be used. An Engle-Granger test performs a unit root test to regression residuals involving the variables within the system. Cointegration does not appear to be present in the system evaluated here, based on a series of Engle-Granger tests performed at different lag lengths. This means standard VAR techniques are an appropriate statistical procedure for the purposes of this project. The results of the Engle-Granger tests are reported in Appendix A at the end of this paper.

4.2 Moving Average Representation. While vector autoregression techniques help to give an indication about the potential causal direction between variables, VAR techniques are less helpful in specifying the direction or the magnitude of the relationship between variables. As a result of the measurement of multiple lags in the VAR system, coefficient estimates are not necessarily informative due to the presence of multicollinearity. A way to learn more about the direction and magnitude of the relationships between dynamic variables is through moving average representation (commonly abbreviated as MAR).

When performing a moving average representation analysis, a simulated shock is induced on a single variable in the system, and then the dynamics of that shock are monitored over a period of time (Wood 2009, 172). After the shock to the single variable in the system, it is possible to see the response other variables in the system have following the change (shock) that is induced on the single variable in the system. In order to have a more consistent interpretation of the size of the change in one variable after another experiences a simulated shock, all of the variables in the system are standardized. A standardized variable is rescaled to have a mean of zero and a standard deviation of one.

5. Data

5.1 Economic Policy Uncertainty Measurement. As discussed previously above, this project examining the consequences of economic policy uncertainty is made possible by the creation and free availability of information collected and calculated by Baker, Bloom, and Davis (2013). To reiterate, the economic policy uncertainty index is a monthly indicator of economic uncertainty in the United States that combines three elements of policy uncertainty into a single indicator (available for download at http://www.policyuncertainty.com/us_monthly.html). The first element is the number of mentions to policy-related economic uncertainty in several prominent U.S. newspapers. The second element explores the number of federal tax code provisions that are set to expire soon, and calculates the revenue consequences of these potentially expiring provisions. The third element is the amount of disagreement amongst economic forecasters regarding inflation in the future, and about future government purchases. Each element is normalized, and then the weighted average of the three components month by month provides a dynamic indicator of economic policy uncertainty.

5.2 Presidential Rhetorical Simplicity Measurement. In order to measure presidential rhetorical simplicity across time, it is important to use a consistent form of presidential remarks that are a legitimate reflection of the strategic linguistic choices made by specific administrations. A good amount of presidential remarks, like executive orders, are filled with procedural language that is rooted in the traditions of the executive branch, and are not a reflection of the rhetorical choices made by a president. In other words, some forms of presidential remarks are not necessarily a way for the president to express the administration's public communications strategy. Other types of presidential remarks, such as the State of the Union Address or press conference responses, occur too infrequently to devise a monthly indicator of rhetorical simplicity. Given these considerations, the president's weekly address to the public, commonly known as the Saturday radio address, is the form of presidential remarks studied in this project. The addresses were collected from the publicly available record of weekly addresses catalogued by the American Presidency Project at UC Santa Barbara (<http://www.presidency.ucsb.edu/>). The average of the Flesch readability scores for the weekly addresses is calculated for each month.

The weekly address, transmitted directly to the public via radio broadcast (and also in recent years distributed through digital venues like whitehouse.gov and YouTube), is the most consistent way for the president to communicate directly to the public on what the chief executive believes are the most relevant topics or issues that particular week. These addresses, free of the procedural language of the office seen in other forms of presidential rhetoric, are a way for the president to communicate in the purest way they want with the public. The weekly address provides the most consistently measurable means to evaluate the strategic style of the modern presidency. For the sake of this project, the weekly address then serves as an approximation of, and by no means a totally definitive indicator of, the rhetorical choices made by the president in remarks to the public.

The weekly addresses have been offered consistently since the beginning of the Bill Clinton administration. Ronald Reagan did introduce the practice of the weekly address in 1982, but George H.W. Bush rarely offered a weekly address to the public. George H.W. Bush only offered eighteen of these types of remarks during his four years in

office. Due to the paucity of observations from the George H.W. Bush administration, the time series measure starts in first full month of the Bill Clinton administration in 1993, and runs through December 2013.

For each month of the year, the average Flesch readability score for the weekly addresses within that specific month is calculated. Since Elvin T. Lim's (2008) major work focusing on presidential rhetorical simplicity measured this concept through Flesch readability scores, it is certainly logical to employ the same readability index for this project. Flesch readability scores are scored such that a higher score is indicative of greater simplicity. The higher the Flesch readability score, the higher the linguistic and substantive simplicity. The dynamics over time between 1993 and 2013 for the two variables are presented in Figure 1 below.

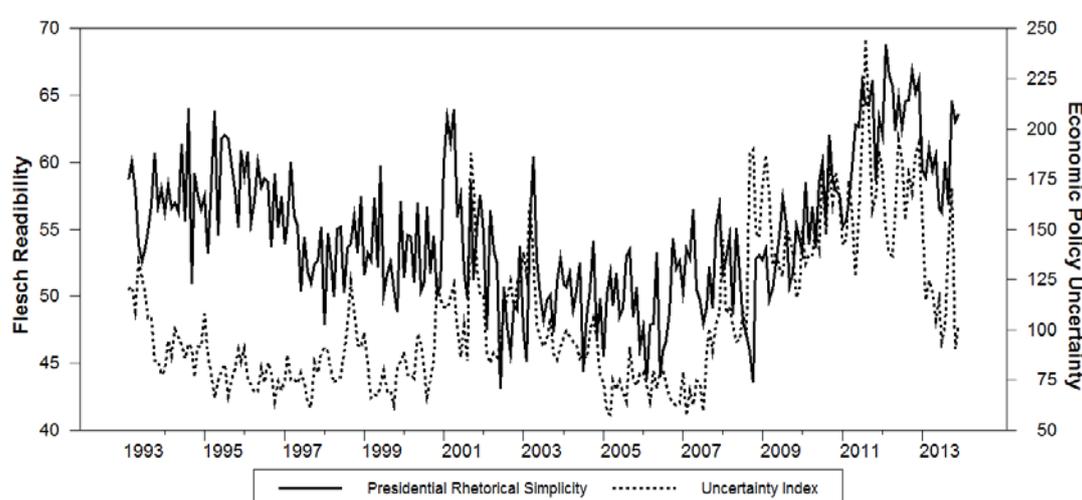


Figure 1. Comparing economic policy uncertainty index and rhetorical simplicity

5.3 Exogenous Controls. To capture the potential role of other factors that can shape either economic policy uncertainty or presidential rhetorical simplicity, several variables are included as exogenous variables in the analysis. This is done through the usage of dichotomous dummy variable indicators (with a score of 1 representing the occurrence of an event or important period, and a score of zero indicating otherwise).

Baker, Bloom, and Davis (2013) mention a variety of events that contributed to spikes in the economic policy uncertainty index that need to be accounted for in this project. The events can also potentially result in shifts in the level of presidential rhetorical simplicity. The following events are accounted for in this project, with a separate dichotomous dummy variable indicator for each: Long-Term Capital Management L.P. collapse (1998:09), September 11th terror attacks (2001:09), the start of the Second Gulf War (2003:03), large interest rate cuts and stimulus (2008:01), Lehman and TARP (2008:10), the banking crisis (2009:02), the debt ceiling dispute (2011:08), and the government shutdown/debt ceiling dispute (2013:10). Since elections can potentially play a role in either spikes in economic policy uncertainty or presidential rhetorical simplicity, every November with either a congressional and/or presidential election is accounted for with a score of "1" in a single variable measuring the occurrence of elections.

A single indicator is included to measure each instance of a major political scandal that received significant news coverage, since the presence of a political scandal can potentially alter the linguistic and substantive simplicity of presidential language. Presidents might have to address controversies that receive significant news attention. After a review of the intensity of coverage on scandals based on news coverage level information collected by the Vanderbilt Television News Archive (<http://tvnews.vanderbilt.edu/>), the scandals that are measured in the project are the following: White House Travel Office FBI investigation report (1993:05), Whitewater grand jury subpoena (1994:05), Filegate (1996:06), Lewinsky story revealed (1998:01), Clinton impeachment in House of Representatives (1998:12), Valerie Plame CIA leak (2003:07), U.S. vs. Libby Trial begins (2007:01), Operation Fast and Furious investigation (2011:02), Benghazi (2012:09), IRS scrutiny and Associated Press phone records (2013:05), and Snowden NSA surveillance (2013:06). The variable representing scandals is coded as a “1” for those months where a major political scandal occurred, and a “0” for those months where a major political scandal did not occur.

There are multiple events that Baker, Bloom, and Davis (2013) did not measure, since they had no explicit or clear connection to the economy, but there are events that attracted media coverage frenzies, and this could potentially alter the president’s rhetorical strategy. As a result, these events need to be accounted for when performing the time series analyses. Again selected based on a comparative review of issue coverage levels from the Vanderbilt Television News Archive, the events measured in this project are the Columbine school shootings (1999:04), Hurricane Katrina (2005:08), the Virginia Tech massacre (2007:04), the Aurora shooting (2012:07), the Newtown school shooting (2012:12), and the Boston marathon bombing (2013:04). Separate indicators for these events are included, since the media frenzies are not all about the same type of event, which is the case with the political scandal events.

Lastly, since the usage of anti-intellectualism in presidential communications strategies has been proposed as an explicit part of the efforts of Republican presidential administrations to present a populist image (Shogan 2007), while Lim (2008) believes that the usage of rhetorical simplicity is a strategy used by all parties, an indicator of administration party affiliation that doesn’t violate collinearity rules has to be included. For this reason, an indicator of the Democratic party as the administration’s party affiliation is included in this analysis. There were two Democrats in office during the time period studied (Clinton and Obama), and there was one Republican (George W. Bush). For those months where a Democrat served in office, the variable is coded as a “1,” and is coded as a “0” for those full months of a Republican administration.

6. Results. The empirical findings of this project support the research hypothesis that changes in economic policy uncertainty guide changes in presidential rhetorical simplicity, such that an increase in the economic policy uncertainty index results in an increase in presidential rhetorical simplicity.

Based on the vector autoregression analysis reported in Table 1, prior economic policy uncertainty index levels Granger-causes presidential rhetorical simplicity (p-value = 0.01). This means prior values on the economic policy uncertainty index significantly predict current values of presidential rhetorical simplicity. Changes in the economic policy uncertainty index influences change in the extent of presidential rhetorical

simplicity. It should also be noted that presidential rhetorical simplicity is inertial, such that prior values of presidential rhetorical simplicity predict current values of presidential rhetorical simplicity (p-value = 0.00).

The vector autoregression analysis results also indicate that the economic policy uncertainty index is not responsive to changes in presidential rhetorical simplicity. Prior levels of presidential rhetorical simplicity fail to significantly predict current levels of the economic policy uncertainty index (p-value = 0.67). The economic policy uncertainty index is inertial though, with prior levels of the index predicting current levels of the index (p-value = 0.00). For information regarding the exogenous controls, see Appendix B.

TABLE 1. Granger Tests for Economic Uncertainty and Presidential Rhetoric System

Independent Variable	Dependent Variable	p-value [F-Statistic]
Economic Policy Uncertainty Index →	Economic Policy Uncertainty Index	0.00 [164.8395]
Presidential Rhetorical Simplicity		0.67 [0.5886]
Economic Policy Uncertainty Index →	Presidential Rhetorical Simplicity	0.01 [3.2062]
Presidential Rhetorical Simplicity →		0.00 [24.9968]

Note: The arrows indicate Granger-causality from the block of coefficients for the independent variable to the dependent variable based on 0.10 significance levels. The p-values are from F-tests for the null hypothesis of no Granger-causality. The system includes a deterministic constant, as well as dichotomous dummy variable indicators for exogenous events involving the economy, the occurrence of congressional and/or presidential elections, political scandals, and the major media frenzy events of the Columbine school shootings, Hurricane Katrina, the Virginia Tech massacre, the Aurora movie theater shooting, the Newtown school shooting, and the Boston marathon bombing. The results of the exogenous controls are omitted here for the sake of space, as there are too many exogenous indicators to report within the table. The focus is on the actual endogenous variables measured in the VAR system. For details on the exogenous controls, refer to Appendix B. Each of the independent variables in the system includes four monthly lags to control for the inertia of the variables. Lag length is selected by Akaike Information Criterion (AIC).

These results suggest that the president is indeed responsive to economic policy uncertainty, but changes in the linguistic and substantive simplicity in presidential rhetoric do not appear to alter the level of economic policy uncertainty in the United States in any real meaningful way. The president, based on the results reported here, is responsive to changes in economic policy uncertainty, but simplifying language in remarks to the public does not seem to significantly shift the extent of economic policy uncertainty in the country.

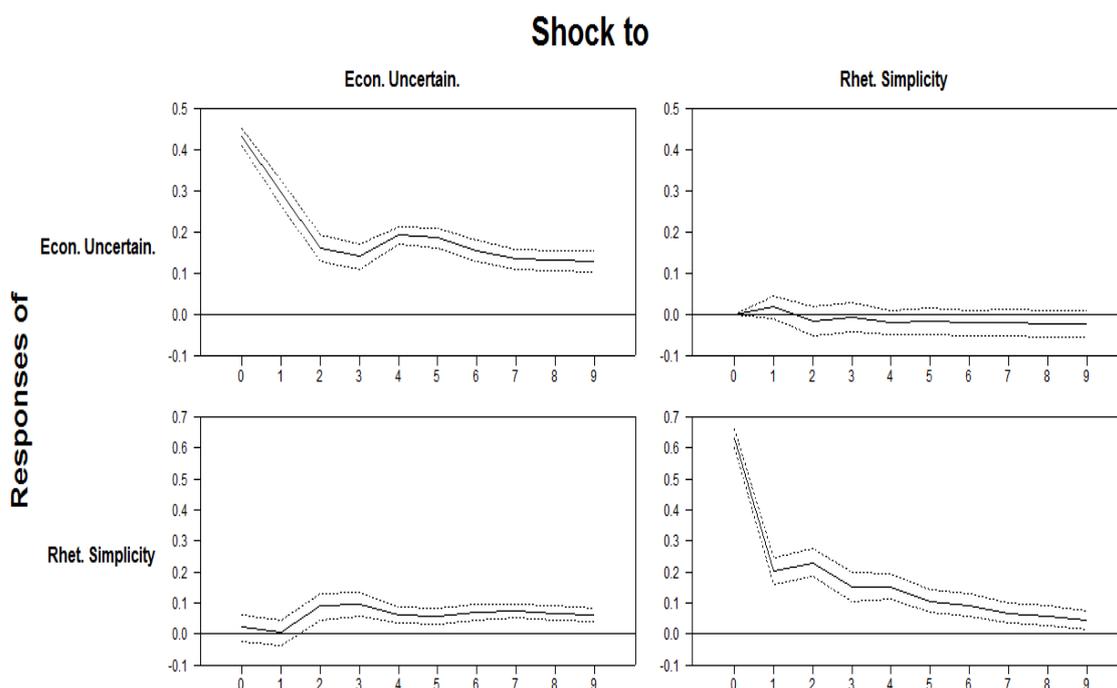
When reviewing the moving average representation results to gain a better sense of the direction and magnitude of the relationship between economic policy uncertainty and presidential rhetorical simplicity, there is clear support for the research hypothesis of the project. An increase in the economic policy uncertainty index results in an increase in presidential rhetorical simplicity that persists for eight months following the first month after the increase in the economic policy uncertainty index. The visual dynamics of the

moving average representation analysis are presented in Figure 2. A numerical table of the innovation accounting following a shock to each variable is available in Appendix C.

Figure 2 displays the responses of variables to simulated shocks to each variable in the system. The simulations are conducted by shocking each variable mathematically to see the implied response the other variable in the system exhibits. The confidence intervals are determined by Monte Carlo integration and the fractile method (Sims and Zha 1999). The number of months following a positive shock to a variable is measured along the horizontal axis of each plot. The positive or negative shift from the standardized mean following the shock is measured along the vertical axis of each plot. The variable that is given the simulated shock is the same within each unique column of the figure. This means in the first column, the variable that receives a positive shock is the economic policy uncertainty index. In row one of column one, the response of the economic policy uncertainty index to a positive shock in itself is displayed. For the sake of this project, we are interested in the dynamics displayed in row two of column one, which demonstrates the response of presidential rhetorical simplicity following a positive shock to the economic policy uncertainty index.

Following the one standard deviation increase in the economic policy uncertainty index, presidential rhetorical simplicity does not move away from the standardized mean at the contemporaneous point of the positive shock, or at the first month after the shock to the economic policy uncertainty index. Following the first month though, we see presidential rhetorical simplicity move away from the standardized mean. This is made evident by the 95% confidence interval being bounded away from the standardized mean of zero. At month two following the positive shock to the economic policy uncertainty index, presidential rhetorical simplicity is almost 0.1 standard deviations above the standardized mean.

This means with an increase in the economic policy uncertainty index, we should expect a gradual increase in presidential rhetorical simplicity, which will be reflected by higher scores for the president's public remarks on the Flesch readability formula, identified by Lim (2008) as an appropriate indicator of linguistic and substantive simplicity. The increase in presidential rhetorical simplicity continues to be significantly above the standardized mean in ensuing months, suggesting the effect of an increase in economic policy uncertainty will result in an increase in presidential rhetorical simplicity that will persist for several months. The president then is being responsive to economic conditions. It could be that when there is an increase in economic policy uncertainty, the president is contemplating and developing the appropriate communications strategy, which explains why we see no movement in presidential rhetorical simplicity until after the first month following the positive shock to economic policy uncertainty. Once the strategy has been thought about and developed, the president sticks with it, which explains why we observe presidential rhetorical simplicity being above the standardized mean throughout the ensuing months.



Note: Dashed lines represent 95% confidence intervals. “Econ. Uncertain.” represents the economic policy uncertainty index, while “Rhet. Simplicity” represents presidential rhetorical simplicity. For a more intuitive interpretation of change across variables in the system, each variable in the system is standardized. Standardization means each variable is rescaled to have a mean of zero and a standard deviation of one. This helps establish a uniform interpretation when comparing change across the economic policy uncertainty index and presidential rhetorical simplicity variables.

Figure 2. MAR Impulse Responses to Uncertainty and Simplicity System

To reinforce the finding of the unresponsiveness of the economic policy uncertainty index to presidential rhetorical simplicity, refer to column two and row one of Figure 2. This panel displays the response of the economic policy uncertainty index to a one standard deviation positive increase in presidential rhetorical simplicity. For the entire time period, the 95% confidence interval is never bounded away from the standardized mean of zero. This suggests that a positive shift in presidential rhetorical simplicity does not result in either positive or negative movement in the economic policy uncertainty index. While presidential rhetorical simplicity appears to respond to changes in the economic policy uncertainty index, the economic policy uncertainty index does not appear to be responsive to changes in presidential rhetorical simplicity.

7. Conclusions. The argument of Lim’s (2008) work is that the simplification of presidential rhetoric is the result of presidents wanting to present themselves as a common, everyday person. His concern is that this results in anti-intellectual presidential remarks that do not offer society meaningful policy information, resulting in a very shallow political discourse. What Lim (2008) does not take into much consideration is that the linguistic and substantive simplification of presidential remarks could be a strategic choice on the part of the president in response to societal conditions, such as rising economic policy uncertainty.

The empirical findings of this project, contrasting the economic policy uncertainty index and the simplicity of presidential rhetoric within the U.S. between 1993 and 2013, offer an initial indication that economic policy uncertainty does indeed shape the rhetorical style the president opts to use in public remarks. An increase in economic policy uncertainty increases presidential rhetorical simplicity, which suggests political elites do make decisions about their public communications strategy based on economic conditions.

In order to see how extensively political elites respond to economic policy uncertainty when making decisions about rhetorical strategy, future research should contrast the level of economic policy uncertainty and the level of political leader rhetorical simplicity in multiple countries. The procedures used by Baker, Bloom, and Davis (2013) in the U.S. context have led them to develop indicators of economic policy uncertainty in a variety of countries, such as Canada, the United Kingdom, Italy, and Germany. It will be worthwhile to contrast the economic policy uncertainty index within each of these nations to the level of rhetorical simplicity employed by the leaders of these specific nations. If economic policy uncertainty does shape the rhetorical strategy of political leaders, then this relationship must be observed empirically in a variety of contexts.

REFERENCES

- Baker, Scott R., Nicholas Bloom and Steven J. Davis. 2013. "Measuring Economic Policy Uncertainty," *policyuncertainty.com* (May 2013): pp. 1-55.
- Bernanke, Ben S. 1983. "Irreversibility, Uncertainty and Cyclical Investment," *Quarterly Journal of Economics* 98, 1 (February 1983): pp. 85-106.
- Campbell, Angus et al. 1960. *The American Voter*. Chicago: The University of Chicago Press.
- Chaithep, Kittiya et al. 2012. "Value at Risk Analysis of Gold Price Returns Using Extreme Value Theory," *The Empirical Econometrics and Quantitative Economics Letters* 1, 4 (December 2012): pp. 151-168.
- Edwards, George C. and B. Dan Wood. 1999. "Who Influences Whom? The President, the Congress, and the Media," *American Political Science Review* 93, 2 (June 1999): pp. 327-344.
- Eshbaugh-Soha, Matthew and Jeffrey S. Peake. 2011. *Breaking Through the Noise: Presidential Leadership, Public Opinion, and the News Media*. Stanford: Stanford University Press.
- Granger, Clive W. J. 1969. "Investigating Causal Relations by Econometric Models and Cross-Spectral Models," *Econometrica* 37, 3 (August 1969): pp. 424-438.
- Hofstadter, Richard. 1963. *Anti-Intellectualism in American Life*. New York: Knopf.
- Julio, Brandon and Youngsuk Yook. 2014 "Policy Uncertainty, Irreversibility, and Cross-Border Flows of Capital," *Social Science Research Network* <http://ssrn.com/abstract=2024612> (April 2014): pp. 1-48.
- Kintsch, W. and J.R. Miller. 1981. "Readability: A view from cognitive psychology," In John Guthrie (ed.), *Comprehension and Teaching: Research Reviews*, Newark: International Reading Association, pp. 220-232.
- Lim, Elvin T. 2008. *The Anti-Intellectual Presidency: The Decline of Presidential Rhetoric From George Washington to George W. Bush*. Oxford: Oxford University Press.
- MacKuen, Michael B., Robert S. Erickson and James A. Stimson. "Peasants or Bankers? The American Electorate and the U.S. Economy," *American Political Science Review* 86, 3 (September 1992): pp. 597-611.
- Olds, Christopher. 2013a. "Evaluating Presidential Attempts at Heightening Issue Attention in the Spanish-Language Press," *Journal of Spanish Language Media* 6, 1 (January 2013): pp. 20-41.

- Olds, Christopher. 2013b. "Assessing Presidential Agenda Setting Capacity: Dynamic Comparisons of Presidential, Mass Media, and Public Attention to Economic Issues," *Congress and the Presidency* 40, 3 (September 2013): pp. 255-284.
- Olds, Christopher. 2013c. "Contrasting the Misery Index, Presidential Rhetorical Optimism on the Economy, and Public Attitudes Regarding Government Involvement in Domestic Affairs," *The Empirical Economics Letters* 12, 10 (October 2013): pp. 1041-1050.
- Olds, Christopher. 2014d. "Presidential Moral Rhetoric and the Public's Policy Mood," *White House Studies* 12, 4 (December 2013): pp. 383-409.
- Pastor, Lubos and Pietro Veronesi. 2012. "Uncertainty about Government Policy and Stock Prices," *The Journal of Finance* 67, 4 (August 2012): pp. 1219-1264.
- Porter, Roger B. 2014. "The Three Presidencies: Power and Policy," In Michael Nelson (ed.), *The Presidency and the Political System*, Thousand Oaks: CQ Press, pp. 500-524.
- Shen, Xi, Kanchana Chokethaworn and Chukiatt Chaiboonsri. 2013. "The dependence structure analysis among gold price, stock price index of gold mining companies, and Shanghai composite index," *The Empirical Econometrics and Quantitative Economics Letters* 2, 4 (December 2013): pp. 53-64.
- Shogan, Colleen J. 2007. "Anti-Intellectualism in the Modern Presidency: A Republican Populism," *Perspectives on Politics* 5, 2 (June 2007): pp. 295-303.
- Sims, Christopher A. 1980. "Macroeconomics and Reality," *Econometrica* 48, 1 (January 1980): pp. 1-48.
- Sims, Christopher A. and T. Zha. 1999. "Error Bands for Impulse Responses," *Econometrica* 67, 5 (September 1999): pp. 1113-1155.
- Van Nguyen, Tuan. 2013. "The stable relationship between crude oil price and petrol price: Evidence from multivariate GARCH model," *The Empirical Econometrics and Quantitative Economics Letters* 2, 2 (June 2013): pp. 27-40.
- Wongkhae, Komkrit et al. 2012. "Does price matter? The FMOLS and DOLS estimation of industrial countries tourists outbound to four ASEAN countries," *The Empirical Econometrics and Quantitative Economics Letters* 1, 4 (December 2012): pp. 107-128.
- Wood, B. Dan. 2007. *The Politics of Economic Leadership*. New Jersey: Princeton University Press.
- Wood, B. Dan. 2009. *The Myth of Presidential Representation*. Cambridge: Cambridge University Press.
- Zhang, Yin and Guang Hua Wan. 2004. "Liquidity constraint, uncertainty and household consumption in China," *Applied Economics* 36, 19: pp. 2221-2229.
- Zhou, Zhicheng and Prapatchon Jariyapan. 2013. "The impact of macroeconomic policies to real estate market in People's Republic of China," *The Empirical Econometrics and Quantitative Economics Letters* 2, 3 (September 2013): pp. 75-92.

APPENDIX A

Engle-Granger Cointegration Test Results Using Different Lags

Number of Lags	3	4	5	6	7
Test Statistic	-2.92739	-2.66850	-2.57460	-2.64395	-2.21768
Critical Value .01	-3.94306	-3.94324	-3.94342	-3.94360	-3.94378
Critical Value .05	-3.36191	-3.36201	-3.36210	-3.36220	-3.36231
Critical Value .10	-3.06270	-3.06277	-3.06284	-3.06290	-3.06297
Observations	248	247	246	245	244

Note: Null hypothesis is no cointegration (residual has a unit root).

APPENDIX B**Full Vector Autoregression Output**

VAR/System - Estimation by Least Squares
 Monthly Data From 1993:06 To 2013:12
 Usable Observations 247

Dependent Variable: Economic Policy Uncertainty

Mean of Dependent Variable -0.006745332 Std. Error of Dependent Variable 1.006220039
 Standard Error of Estimate 0.429594251 Sum of Squared Residuals 40.785819765
 Durbin-Watson Statistic 1.9078

Variable	Coefficient [Std. Error]	t-statistic	p-value
Economic Policy Uncertainty{Lag 1}	0.68372 [0.06212]	11.00618	0.00000
Economic Policy Uncertainty{Lag 2}	-0.09683 [0.07755]	-1.24852	0.21316
Economic Policy Uncertainty{Lag 3}	0.13133 [0.07892]	1.66409	0.09751
Economic Policy Uncertainty{Lag 4}	0.17073 [0.06094]	2.80181	0.00553
Presidential Rhet. Simplicity {Lag 1}	0.03099 [0.04470]	0.69328	0.48886
Presidential Rhet. Simplicity {Lag 2}	-0.05667 [0.04639]	-1.22167	0.22313
Presidential Rhet. Simplicity {Lag 3}	0.01961 [0.04635]	0.42314	0.67260
Presidential Rhet. Simplicity {Lag 4}	-0.02358 [0.04493]	-0.52473	0.60030
Constant	-0.09010 [0.05479]	-1.64453	0.10149
Scandals	0.07468 [0.14120]	0.52887	0.59743
Elections	0.25539 [0.14539]	1.75652	0.08038
Iraq War	1.18823 [0.44000]	2.70054	0.00746
September 11 th attacks	2.83458 [0.43850]	6.46429	0.00000
Long-Term Capital Management L.P. Collapse	0.77700 [0.43497]	1.78635	0.07541
Large Interest Rate Cuts and Stimulus	1.19153 [0.43713]	2.72579	0.00693
Lehman and TARP	0.85540 [0.46376]	1.84450	0.06645
The Banking Crisis	0.53779 [0.45662]	1.17776	0.24016
Debt Ceiling Dispute 2011	1.97072 [0.44866]	4.39241	0.00002
Government Shutdown/Debt Ceiling Dispute 2013	1.13637 [0.43837]	2.59227	0.01017
Democrat Presidential Administration	0.05181 [0.07434]	0.69692	0.48659
Columbine School Shootings	-0.21525 [0.43624]	-0.49342	0.62220

Variable	Coefficient [Std. Error]	t-statistic	p-value
Hurricane Katrina	-0.20868 [0.43349]	-0.48140	0.63071
Boston Marathon Bombing	-0.49881 [0.44595]	-1.11854	0.26455
Newtown School Shooting	0.64822 [0.44182]	1.46717	0.14375
Aurora Shooting	0.45714 [0.44573]	1.02560	0.30620
Virginia Tech Shooting	-0.25418 [0.43637]	-0.58249	0.56083

Dependent Variable: Presidential Rhetorical Simplicity

Mean of Dependent Variable -0.008955746 Std Error of Dependent Variable 1.004004467
 Standard Error of Estimate 0.631008392 Sum of Squared Residuals 87.995921454
 Durbin-Watson Statistic 2.0604

Variable	Coefficient [Std. Error]	t-statistic	p-value
Economic Policy Uncertainty {Lag 1}	-0.00449 [0.09125]	-0.04916	0.96084
Economic Policy Uncertainty {Lag 2}	0.19165 [0.11392]	1.68236	0.09391
Economic Policy Uncertainty {Lag 3}	0.02331 [0.11592]	0.20111	0.84080
Economic Policy Uncertainty {Lag 4}	-0.0706 [0.08951]	-0.78835	0.43134
Presidential Rhet. Simplicity {Lag 1}	0.31724 [0.06566]	4.83150	0.00000
Presidential Rhet. Simplicity {Lag 2}	0.25671 [0.06814]	3.76759	0.00021
Presidential Rhet. Simplicity {Lag 3}	0.03588 [0.06809]	0.52702	0.59871
Presidential Rhet. Simplicity {Lag 4}	0.06137 [0.06600]	0.92994	0.35342
Constant	-0.23177 [0.08048]	-2.87990	0.00437
Scandals	-0.18290 [0.20740]	-0.88184	0.37882
Elections	-0.12979 [0.21356]	-0.60774	0.54399
Iraq War	1.26266 [0.64629]	1.95371	0.05200
September 11 th attacks	1.38226 [0.64409]	2.14607	0.03296
Long-Term Capital Management L.P. Collapse	0.05036 [0.63890]	0.07883	0.93724
Large Interest Rate Cuts and Stimulus	-0.37232 [0.64208]	-0.57987	0.56259
Lehman and TARP	-0.89092 [0.68119]	-1.30789	0.19227
The Banking Crisis	-0.08950 [0.67071]	-0.13344	0.89397
Debt Ceiling Dispute 2011	0.34402 [0.65902]	0.52201	0.60218

Variable	Coefficient [Std. Error]	t-statistic	p-value
Government Shutdown/Debt Ceiling Dispute 2013	1.38171 [0.64390]	2.14585	0.03298
Democrat Presidential Administration	0.36680 [0.10920]	3.35891	0.00092
Columbine School Shootings	0.63745 [0.64078]	0.99480	0.32092
Hurricane Katrina	0.76150 [0.63674]	1.19593	0.23301
Boston Marathon Bombing	0.09382 [0.65503]	0.14323	0.88624
Newtown School Shooting	0.35930 [0.64896]	0.55366	0.58037
Aurora Shooting	-0.04875 [0.65471]	-0.07445	0.94072
Virginia Tech Shooting	0.97259 [0.64096]	1.51740	0.13059

Note: Output from analysis performed in RATS version 8. Table results rounded to fifth decimal place.

APPENDIX C

Innovation Accounting of Response to Shock in Variables

Responses to Shock in Economic Policy Uncertainty (Variables in System Standardized)

Month	Response of Economic Policy Uncertainty	Response of Presidential Rhetorical Simplicity
0	0.40636	0.01750
1	0.27837	0.00373
2	0.15011	0.08230
3	0.13173	0.08984
4	0.17925	0.05683
5	0.17524	0.05257
6	0.14361	0.06559
7	0.12530	0.06968
8	0.12352	0.06271
9	0.11914	0.05781

Responses to Shock in Presidential Rhetorical Simplicity (Variables in System Standardized)

Month	Response of Economic Policy Uncertainty	Response of Presidential Rhetorical Simplicity
0	0.00000	0.59662
1	0.01849	0.18927
2	-0.01530	0.21312
3	-0.00467	0.14122
4	-0.01734	0.14043
5	-0.01419	0.09759
6	-0.01844	0.08287
7	-0.01784	0.06234
8	-0.01940	0.05061
9	-0.01902	0.03826

Note: Output from analysis performed in RATS version 8. Table results rounded to fifth decimal place.