Wealth Effects of Government Dependency on Firms

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ABSTRACT

In this paper, I find an economically and statistically significant relation between the firms' dependency on government entities for their revenue and the cross-section of future stock returns. Using *ex-ante* COMPUSTAT's segment reporting information, I construct firms' government dependency variables and study their return predictabilities. I find all of my dependency variables to be both economically and statistically significant in predicting the cross-section of future returns, government dependent firms earning up to 0.98% of abnormal returns per month in some cases - results stronger among small- and medium-sized firms. Return predictability is coming from favorable changes in firms' accounting and profitability characteristics and increase in their probability to win a material government contract after being government dependent. Risk versus mispricing analysis tells us that the abnormal returns earned by government dependent firms may be the compensation for additional risks they are bearing.

Keywords: Government Dependent Firms, Political Connections, Stock Returns

EFM Classification: 310, 320, 330, 350, 380

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There is a rapidly growing body of literature in finance that studies the merits/demerits of political connections to firms. Research shows that politically connected firms get preferential access to credit, are more likely to get government contracts, receive regulatory protection, receive government aid when they are in financial trouble, and have lower cost of capital [1]. Furthermore, studies also show that political connectedness increases the firm value by increasing the stock prices [2].

However, research also documents the ineffectiveness of campaign donations as a form of gaining influence or buying favorable policies and finds that firms that give soft money to political parties do not seem to enjoy noticeably high rates of returns from their contributions [3]. While some find political connectedness to be correlated with a given country's corruption level, other find no evidence of better performance among firms engaged in administrative corruption, and some even finds that political donations are associated with lower returns[4].

Furthermore, Faccio (2010) showed that, while these politically connected firms seem to enjoy higher market share and pay lower taxes, they underperform compared to non-connected companies on an accounting basis. The paper found that politically connected firms have higher leverage, lower productivity, lower return on assets, and lower market-to-book ratio compared to politically non-connected firms. This finding seems to imply that political connections make firms less efficient and less competitive, as they enjoy preferential treatment from the government.

The findings are paradoxical in that even though politically connected firms may seem to provide higher returns for their shareholders, they become less competitive and less efficient. First, the long-term benefits of political connections to firms are still inconclusive and second the benefits of government dependency, somewhat similar but different concept than political connectedness, has not been studied yet.

In this paper, using the channel used by Cohen and Malloy (2016), I identify government dependent firms, construct government dependency variables using the *ex-ante* information from COMPUSTAT, and study the wealth effects of government

[1] See Johnson and Mitton (2003), Joh, Chiu, et al. (2004), Cull and Xu (2005), Khwaja and Mian (2005), Goldman, Rocholl, and So (2013), Kroszner and Stratmann (1998), Faccio, Masulis, and McConnell (2006), Boubakri, Guedhami, Mishra, and Saffar (2012b)

[2] See Roberts (1990) Goldman, Rocholl, and So (2009) Boubakri, Cosset, and Saffar (2012a) Cooper, Gulen, and Ovtchinnikov (2010)

[3] See Ansolabehere, De Figueiredo, and Snyder (2003), Ansolabehere, Snyder Jr, and Ueda (2004)

[4] See Faccio (2006), Hellman, Jones, and Kaufmann (2000), Aggarwal, Meschke, Wang, et al. (2012)

dependency on firms. I find that firms' government dependency positively and significantly predicts the cross-section of future stock returns.

Even though some studies have found that the politically connected firms earn higher abnormal returns, the means by which they do so is not understood very well yet. When we are trying to understand the means by which politically connected firms earn higher abnormal returns, two hypotheses arises naturally (1) firms earn higher returns by obtaining favorable policies, (2) firms earn higher returns by obtaining government contracts. While few findings seem to go against the first hypothesis [5], the studies that examine the validity of second hypothesis are rare. This paper contributes to the literature by providing the evidence that is consistent with the second hypothesis, results in line with Goldman et al. (2013). Using the political connections variables used by Cooper et al. (2010), I show that a firm's political connectedness positively and significantly predicts it's probability of winning the material government contracts.

Finally, as the government dependency is a direct consequence of government-spending, my paper is also related to the literature that study the issues around government spending. At the macro level, researchers have found a significant positive impact of government spending on the local economy (e.g. employment, income, wages, rents) and welfare, and on the stabilization of firms' revenue and investments at bad times [6]. However, the question of whether government spending increases the value of the firms that are directly linked to it remains unclear. This paper also contributes to answer the question about the wealth effects of government spending on firms that receive the government spending dollars.

Exploiting a statutory requirement mandating firms to report large and important customers (i.e., any single customer that is responsible for at least 10% of the firm's revenue), I identify a sample of firms that do significant business with US domestic, state, local, or foreign government entities and designate those firms as government dependent firms. The firms in my comparison group, which I call government non-dependent firms (or rest of the market), are all the remaining firms in the market whose information is available in both CRSP and COMPUSTAT for at least some portion of my sample period.

[5] See Ansolabehere et al. (2003) and Hellman et al. (2000)

[6] See Shoag (2012), Serrato and Wingender (2014) Wilson (2012), Chodorow-Reich, Feiveson, Liscow, and Woolston (2012), Goldman (2016)

While constructing my government dependency variables to study the wealth effects of government dependency on firms, I try to capture the aspects of government dependency that are most important to investors. Besides caring about whether a firm has a significant business with government or not, investors might care about the economic magnitude of sales dollars coming from the government, for how long the firm has been depending on government for the material portion of it's revenue, and how consistent the dependency has been over the years.

The first dependency variable RPT (report)[7] is a plain binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm reports any government entity as a major customer (for brevity, I call this government reporting). It plainly bucketize the firms in my sample into two groups: government dependent and non-dependent firms. Length of a firm's government dependency is captured by the variable STR (strength), which is the number of times a firm does government reporting till date divided by the number of months since it's first government reporting [8]. Consistency of government dependency is captured by the variable SRP (surprise). When a firm does the government reporting followed by a year for which the firm does not do the government reporting, I call that a surprise government reporting or plainly surprise reporting. SRP is the number of surprise reporting by a firm till date divided by the number of months since it's first government reporting.

Following Fama and French (2008), I use panel regressions and sorting methodologies both treating my whole sample as one group and treating the sample as three different size based sub-samples - small, medium, and large as bottom, middle, and top 33% of the sample firms' market capital - to study the wealth effects of government dependency on firms. The results are strong when I do the separate analysis on each of the size based sub-samples, medium group showing the strongest results. Panel regression results show that medium sized government dependent firms on average earn 80 basis points of abnormal returns per month in the following year post government reporting when compared to non-dependent firms. Furthermore, sorting methodology shows that a value-weighted portfolio of medium-sized government dependent firms on average earns a Fama-French-Carhart (henceforth FFC) six factors alpha of 98 basis points per month in the following year post government reporting. The abnormal returns are very significant both economically and statistically.

[7] I explain the subscript _T3 attached to dependency variables in subsection I.C

[8] See the section I.C for detail explanations on dependency variables.

My next analysis is about the sources of return predictability. Here, I try to understand the changes in the characteristics or in the business environment of government dependent firms post government reporting that led them to earn abnormal returns. Using the political connections variable used in Cooper et al. (2010), first, I find that political connectedness increases the probability that the firms win the material government contracts. Second, I find that having the material government contracts in the past also increases their probability to get the new ones, e.g. having the material government contracts ten years ago increases the probability of the firm getting those contracts again by about 22%.

With regard to firm characteristics, I find that government dependent firms in general when compared to the rest of the market have higher assets, are bigger in size in terms of market capital, enjoy higher market share, have higher leverage, have higher implied federal income tax rates, and their profitability and cash flow ratios across the board lower. However, compare to these firms' characteristics pre government reporting, post government reporting their assets and market capital increases significantly, they enjoy even higher market share, their leverage turns lower, their implied tax rates get lower, and, more interestingly, their profitability and cash flow ratios across the broad take the significant higher turn. Post government reporting, the government dependent firms become lager, better, and more profitable, enabling them to earn higher abnormal returns.

Considering the very high abnormal returns earned by these firms, the obvious question to ask is that are their abnormal returns just a compensation for some kind of additional risks these firms are bearing when compared to general market. Or, is their returns come from the sub-optimal behavior of the investors? Next, I use dozens of proxies for risks and mispricing to see if the sensitives of government dependent firms with respect to these proxies is significantly different then that of the rest of the market.

Considering the sample firms, it's natural to look at their sensitivities to economic political risks. To study this, I use four uncertainty indexes - Economic Political Uncertainty, Geopolitical Risks, Government Spending Uncertainty, and Regulation Uncertainty - all available at *http://www.policyuncertainty.com* [9]. I further analyze

[9]Geopolitical Risk Index is hosted by the site but developed by Dario Caldera and Matteo Locaviello at the Federal Reserve Board. The rest of indexes are developed by Baker, Bloom, and Davis (2016)

the returns of these firms during US presidential election years and post elections years with the assumption that all political uncertainties should be higher right before the US presidential elections and get somewhat resolved post election. Tail risks and idiosyncratic volatility measures are other two risks that I look at. I find all the risk measures unanimously supporting the view that the abnormal returns earned by these firms might be a compensation for some sort of additional risks (e.g. political) that they are bearing.

My mispricing proxies are price efficiency measures, information uncertainty proxies, and aggregate sentiment indexes that come from various sources [10]. With regard to mispricing proxies the results are a bit conflicting, however majority of proxies tells us that mispricing is actually lower among government dependent firms, evidence suggestive of lower future abnormal returns rather higher abnormal returns that I find. Hence, I conclude that the abnormal returns earned by the government dependent firms are more likely due to risks rather than due to mispricing.

The remainder of the paper is organized as follows. In Section I, I discuss the data sources for return as well as fundamental information of the firms and how I construct my government dependency variables. Section II presents the results from panel regressions and the Fama French (henceforth FF) portfolios constructed based on the values of the dependency variables. I discuss potential sources of return predictability in section III. Section IV shows the the risk versus mispricing analysis of the abnormal returns earned by the government dependent firms. Finally, Section IV concludes the article.

I. Data Sources and Variable Construction

All of the data used in this study come from CRSP and COMPUSTAT, and the sample period runs from January 1979 through December 2014. In my sample, out of all the reporting in which any firm reports any government entity as a customer, 87.81% report US domestic government, 9.59% report foreign governments, 1.63% report US state governments, and 0.96% report US local governments among their major customers. US domestic government includes entities such as US military, Department of Defense and NASA, and Medicare; foreign governments include entities

[10] See, Hou and Moskowitz (2005),Lo and MacKinlay (1988), Zhang (2006), Baker and Wurgler (2006), Cooper, Gutierrez, and Hameed (2004)

such as the Ministry of Communications in Columbia, Germany Department of Defense, and Caina Economica Federal; US local governments include entities such as the National Institute of Health, City of Cupertino, and New York City; and US state governments include entities such as Pennsylvania Department of Corrections, New York City Department of Transportation, and the State of Tennessee. The largest ever yearly sale to the US domestic government in my sample was made by General Dynamics in 2010 in the amount of $45.65 billion.

A. Returns, Fundamental, and Segment Report Data

For the return information, I use the monthly security file *msf* from CRSP and for the fundamental information on the firms, I use the *funda* file from COMPUSTAT. Segment reporting information comes from *seg_hist* file from COMPUSTAT.

I combine the return information from the *msf* file and fundamental information from the *funda* file using the CRSP-COMPUSTAT Link file *ccmxpf_linkhist*. In the merged file, if a firm defined by an unique GVKEY has multiple securities listed in the *msf* file, I keep the securities with share codes 10 and 11. Then, to avoid the issue of a single GVKEY to multiple PERMNOs relationships within the same time frame, I further drop the securities with security class of B, C, D, E, G, H, L, N, P, T, U, and V, in that order, and then the securities that have the CRSP-COMPUSTAT link type of NR, NP, NU, NX, and NE, in that order. If the problem of one to many relationships between GVKEY and PERMNOs still persists, I keep the security with the highest market cap out of the remaining securities linked to a single GVKEY within the same time frame. From January 1979 through December 2014, according to COMPUSTAT segment information, 4,905 unique firms (defined by the unique GVKEYs) reported government entities among their major customers. After I merge COMPUSTAT segment data with fundamental data, my sample of government dependent firms is reduced to 4,080 firms. Of these, 301 firms disappear from the sample the year after they report any government entity as a major customer; hence, they are not included in the abnormal return calculations of government dependent firms. To avoid the risk of extreme outliers incorrectly influencing the results, I further trim the firm-month observations in which the price of the security is below $3. After all the data cleaning, my final sample consists of 2,400,373 total firm-month observations of 23,887 firms (defined by the unique GVKEYs), of which I treat 20,323

firms as government non-dependent firms and 3,564 as government dependent firms.

B. Government Dependency Variables

I try to capture multiple aspects of government dependency such as length, strength, or economical magnitude through my dependency variables. The first dependency variable RPT[11] (report) is a binary variable that is equal to 1 for the following twelve firm-month observations of a firm once it reports any government entity as a customer. This variable is dummy that puts firms into two groups - government dependent and non-dependent - for the purpose of the studying the wealth effects the next year after a firm does government reporting. The variable assumes that the information provided by the firm about its dependency on government entities becomes obsolete to investors after a year. In short, RPT examines whether the firm reported any government entity as a customer in the year $t-1$ in particular.

$$RPT_{i,\,\{t-1\,<\,t\,<t+12\}} = 1 * I, \;\; I = \begin{cases} 1, & \text{if firm i reports Government as customer} \\ & \text{at month } t-1, \\ 0, & \text{otherwise.} \end{cases}$$

The second government dependency variable that I use to analyze wealth effects looks at how often a firm reports any government entity as a major customer. The variables STR (strength) is the number of times a firm reports any government entity as a major customer to date divided by the number of months the firm is in the sample to date since it's first government reporting. The number of government reporting stays constant as that of the previous year for the subsequent year(s) in which the firm does not do the government reporting.

$$Report\_Count_{i,\,\{t-1\,<\,t\,<t+12\}} = Report\_Count_{i,t-1} \; + 1 * I,$$

$$Where, I = \begin{cases} 1, & \text{if firm i reports Government as customer} \\ & \text{at month } t-1, \\ 0, & \text{otherwise.} \end{cases}$$

[11] I explain the meaning of subscription _T3 in next section - Industry Adjustment and Dummying out of Dependency Variables.

$$Then,\ \ STR_{i,t} = \frac{Report\_Count_{i,t}}{Firm\_Age_{i,t}}$$

The purpose of creating the variable STR is two fold - to create a strength of government dependency variable that is continuous and to let the strength variable decay slowly with time as the information strength of subsequent reporting to investors should be smaller than that of the previous one. If a firm stops reporting any government entity as a major customer, the value of STR gradually decreases over time, dividing by the firm's age since the first government reporting giving the decaying effect.

Third dependency variable used to study return predictabilities is the variable SRP (surprise). From the investor's point of view, the surprise factor of a firm's first government reporting should be higher than that of its subsequent continuous government reporting. SRP is the number of surprise reporting (i.e., government reporting followed by a year in which the firm did not do the government reporting) by the firm to date divided by the number of months the firm is in the sample to date since it's first government reporting.

The value of SRP goes up only when the firm discontinuously do the government reporting. Besides capturing information surprises, this variable also captures the variability of the firm's government reporting. If a firm always does the government reporting after it's first government reporting, the numerator of SRP stays at 1 throughout the life of the firm in the sample.

$$Surprise\_Count_{i,\,\{t-1\,<\,t\,<t+12\}} = Surprise\_Count_{i,t-1}\ + 1 * I,$$

$$Where, I = \begin{cases} 1, & \text{if firm i reports Government as customer at month} \\ & \text{t-1 and (i) it does not report Government as customer} \\ & \text{at month t-13, or ii) if firm i is not in the sample in} \\ & \text{month } t-13 \text{ or before,} \\ 0, & \text{otherwise.} \end{cases}$$

$$Then,\ \ SRP_{i,t} = \frac{Surprise\_Count_{i,t}}{Firm\_Age_{i,t}}$$

If a firm does government reporting in one year, followed by a year in which the

firm did not do the government reporting, I assume that the investors will be surprised by the firm's discontinuous government reporting. As it is the case with STR, the purpose of creating the variable SRP is again two fold - to create a surprise variable that is continuous and to let the surprise variable decay slowly with time as the information strength of subsequent surprise reporting to investors should be smaller than that of the previous one. As a firm continuously does government reporting, the surprise factor for investors should slowly decay, and the variable SRP captures that notion as well.

The final and fourth government dependency variable that I use to study return predictability of government dependency is SLE (sale). It is defined as a firm's total sales to any government entities as a percentage of the firm's total sales for the year. This variable looks at the actual dollar amounts that a firm receives from government entities. In other words, this variable captures the economic magnitude of the firm's government dependency. Because about 25% of the reporting by the firms of any government entity as a customer that are listed in COMPUSTAT have sales dollars missing probably due to the sensitivity of confidential government information, the variable SLE is not as accurate as the other dependency variables. For a given year, a firm might make sales to multiple government entities, including US government, state governments, local governments, or foreign governments. In my sample, for a given year for a given firm, I consolidate all the sales made to multiple government entities (if more than one) into a single number and call it a government sale. If one or more of the multiple sale transactions to the government entities have a missing dollar amount, then the consolidated sales dollars are downwardly biased and do not provide a true information about the magnitude of government sale.

Since the firms are only required to make the reporting if one single customer is accountable for at least 10% of the sales, it does not make sense to have SL values to be less than 10%. In my sample, for any firm that has SLE value of less than 10% for a given year due to the missing sales information, I then increase the SL value to 10%. The variable SLE makes the most economic sense, but the limited availability of the information in COMPUSTAT makes this information somewhat incomplete. Despite these shortcomings, the variable SLE is still statistically and economically significant in telling us about the value of the government dependency.

Finally, I define few dummy variables that are not used to study the wealth effects but to perform the specific analysis. One such dummy is GTYPE, government type,

which is a binary variable that is equal to 1 for all subsequent firm-month observations once a firm reports any government entity as a customer, including the year in which the firm does the government reporting, and 0 otherwise. Once a firm reports any government entity as a customer, the firm becomes a "government type" firm for life regardless of whether or not the firm reports any government entity as a customer in subsequent years. I use this variable for risks versus mispricing analysis to assign my sample firms into two mutually exclusive groups: the government dependent and non-dependent firms and I do not use it to study the wealth effects.

$$GTYPE_{i,t} = 1 * I, \;\; I = \begin{cases} 1, & \text{if firm i reports Government as customer} \\ & \text{for current year or for any year in the past ,} \\ 0, & \text{otherwise.} \end{cases}$$

One derivation of GTYPE is GTYPE_LAG, which is basically the variable GYPE that excludes the year for which a firm reports government as it's major customer. I use this variable to study the change in firm characteristics post government reporting. Since I want to see the changes in firm characteristics post government dependency, I exclude the year for which the firm does the government reporting for the first time from the post government reporting years.

Last dummy variable defined for specific study is GOV_REP which is equal to 1 for all the firm month observations of a firm for the year for which the firm does the government reporting. I use this variable to study the predictability of past GOV_REP values (e.g. 6 or 10 years lagged values) on current GOV_REP. The analysis tells me about how the firm's probability of winning the material government contracts changes once it has those contracts.

$$GOV\_REP_{i,t} = 1 * I, \;\; I = \begin{cases} 1, & \text{if firm i reports Government as customer} \\ & \text{for current year ,} \\ 0, & \text{otherwise.} \end{cases}$$

Because all of the above-mentioned variables are trying to capture different aspects of the government dependency of a firm, it is fair to assume that many of these variables are highly correlated among themselves. As I show in Table 1, correlations among variables run as high as 77.3%, between STR and RPT, and as low as 11.9%,

between SLE and SRP.

C. Industry Adjustment and Dummying out of Dependency Variables

I present fundamental descriptive statistics, return and profitability descriptive statistics, and the breakdown of the number of firms in the sample in Table 2, Panel A, B, and C, respectively. Descriptive statistics are by FF 12 industries classification. Due to the significant variations in the different accounting, profitability, and firm characteristic measures, all of the right-hand-side variables, except the government dependency variables, in my regressions are FF 49 industries median adjusted (except in Table A1). As most of the government dependency variables are binary or based on discrete numbers, such as number of government reporting till date, similar industry adjustment is inappropriate for those variables.

Since I am interested in the benefits of government dependency and the benefits of government spending on firms, I want to focus on the firms in the industries where government spending is material and concentrated. To isolate the firms for my study, based on the FF 12 industry classification, I first create three industry groups: (1) "Finance" includes industry 11 (finance), (2) "Top Three" includes three industries out of the remaining 11 FF 12 industries that had the largest government sales dollars in previous year, and (3) "Other" includes the remaining eight industries of FF 12 industries. Just as M&A papers exclude transaction with certain deal value to look at only meaningful transactions, industry grouping is meant to differentiate the industries with a very high impact of government dependency from others. During thirty-six years of my sample period, only FF 12 industries 3 (Manufacturing), 6 (Business Equipments), 8 (Utilities), 10 (Health care, Medical Equipment, and Drugs), and 12 (Other — Mines, Construction, Building Materials, Transportation, Hotels, Business Services, Entertainment), appears at least once as top three industries - industries 3, 6, 8, 10, and 12 appearing 36, 36, 3, 20, and 26 times, respectively. On average, the top three industries account for 75%, with standard deviation of 7.18%, of the year's total government sales dollars by all firms, sales by firms to government entities by three industry group in Figure II.

Next, I created three industry group dummies: TOP3 dummy which is equal to 1 if a firm is in "Top Three" industry group in previous year and 0 otherwise, FIN dummy which is equal to 1 if a firm is in "Finance" industry group and 0 otherwise, and ONF

dummy which is equal to 1 if a firm is in "Other" industry group in previous year and 0 otherwise. Then, I interact my government dependency variables with each of the dummy to create the groups of government dependent firms to study the wealth effects of government dependency. The subscript of "_T3", "_F", and "_O" means the variables are interacted with the industry group "Top Three", "Finance", and "Other", respectively.

I present the return predictability of each of my government dependency variables (RPT, STR, SRP, and SLE) interacted with each of the industry grouping dummies in Table 3. For each of the dependency variable, the variable interacted with the "TOP3" dummy are statistically and economically significant, while none of the variables, except one, interacted with ONF dummy or FIN dummy are either statistically or economically significant. For my further analysis of the cross-sectional return predictability of the dependency variables, I dummy out all the firms not in "Top Three" industry group.

II. Results

Fama and French (2008) says that sort methodology and panel regression are two methodologies most commonly used to analyze abnormal returns predictability. Compared to sort methodologies, the panel regression methodology is a better way to examine the functional form of the relations between average returns and the explanatory variables. However, the regression estimated on all stocks can be dominated by micro-cap stocks and/or extreme results. On the other hand, potential pitfalls of sorting method is its unfair weighting on particular stocks and over influence by micro-cap stocks. To mitigate these issues and because panel regression and sort methodologies can provide a checking mechanism for each other's results, the paper suggest to use both methodologies. Following Fama and French (2008), I use panel regression and sorting methodology for my abnormal return analysis.

A. Panel Regressions

First, I somewhat mitigate the issues that Fama and French (2008) discuss regarding to the micro-cap stocks by dropping all the firm-month observations in which the stock prices are less than $3. Furthermore, just as Fama and French (2008) do,

I separate the firms in my sample into three size based groups - small, medium, and large (corresponding to the bottom, middle, and top 33% of the sample MCAPs, respectively) - and run the FM cross-sectional regressions separately on each of the size groups.

Simple Fama-MacBeth regression equally weights each month when it estimates the average coefficients. As the total government sales to US domestic government alone, in the context of my sample, increased from about 46 billion in 1979 to over 400 billion by 2009, number of government reporting changed drastically as well. Hence, equal weighting of monthly information when calculating the average coefficient seems inappropriate for my sample. Fama (1998) recognizes these kinds of problems and, as a solution, recommends weighting the monthly regression estimates by their precision. The paper says that one can weight the portfolio abnormal return for a month in any way that captures the economic hypothesis of interest. In my FM regressions, my weighting mechanism is the number of observations for the month. For completeness, I also performed all of my Fama-MacBeth regressions with out using any weighting mechanism and found that the results are very much stay the same.

I present the results of separate FM regressions for the small, medium, and large size groups in Table 4. Besides the separate FM cross-sectional regressions for each size category, I also perform the FM cross-sectional regressions using the whole sample as a single group, the results of the analysis shown in Table 5.

Results in Table 4 show that my results are not driven by micro-caps stocks; in fact the abnormal returns are highest and most statistically significant among medium size firms. All government dependency variables are significant at 1% level in both small and medium size terciles even after controlling for well-known anomalies such as book-to-market, size, asset growth, and momentum. In large size tercile, however, only STR_T3 is significant at 1% level - RPT_T3 and SRP_T3 significant at 5% and SLE_T3 at 10% level, respectively. After controlling for well known anomalies, small, medium, and large government dependent firms that are in Top Three industry group, on average, earn a monthly returns of 47, 80, and 28 basis points, respectively, in the following year after the government reporting over and above the return of government non-dependent firms.

The interpretation of the coefficients of STR_T3 and SRP_T3 is not very direct as their exact interpretation depends on how long ago a firm first did government reporting, how many times since then it did the government reporting, and how

discontinuously the firm did the government reporting. For example, one specific interpretation of the coefficients of STR_T3 in Table 4 can be that, after controlling for well-known anomalies, a medium sized government firm that did the government reporting five years ago and continuously doing the government reporting since then will earn, on average, about 84 basis points (*5/60 * 1,010*) per month more in next twelve months than a medium size government non-dependent firm. However, for the exact firm if it had done the government reporting only four out of last five years, the predicted return differential would have decreased to 67 basis points (*4/60 * 1,010*).

Similarly, one specific interpretation of the coefficients of SRP_T3 in Table 4 can be that, after controlling for well-known anomalies, a medium sized government firm that did the government reporting five years ago and did the surprise government reporting twice (maximum) since then will earn, on average, about 126 basis points (*3/60 * 2,510*) per month more in next twelve months than a medium size government non-dependent firm. However, for the exact firm if it had done the surprise government reporting only once since then, the predicted return differential would have decreased to 84 basis points (*2/60 * 2,510*).

Then, Column 8 of Table 4 says that, after controlling for well-known anomalies, 10% increase in the ratio of sales to government entities to total sales for a medium sized government dependent firm for the year increases the firm's abnormal return by 20 basis points per month for next twelve months.

As I show in Table 5, the results of the FM cross-sectional regressions of all the sample firms as one group makes it apparent that the return predictabilities of each of the government dependency variables are both economically and statistically significant, both before and after controlling for well-known anomalies (e.g., book-to-market, size, asset growth, and momentum). The models in Columns 1 through 4 in Table 5 show univariate FM cross-sectional regression results of each of the dependency variables. All four dependency variables - RPT_T3, STR_T3, SLE_T3, and SRP_T3 - are significant at the 1% level. Because some of my variables are highly correlated, as shown in Table 1, the model in Column 5 shows that the results differ when I put all the variables together in one regression, SLE_T3 and SRP_T3 loosing their significance. Before controlling for well-known anomalies, a firm in the Top Three industry group that does government reporting earns, on average, 41 basis points more per month (4.92% per year) in next twelve months compared to the government non-dependent firms, and a 10% increase in the ratio of the sales to the

government entities to total sales of the firm for the year increases the firm's abnormal return by 7 basis points per month (0.96% per year).

As shown in Columns 7 through 10 in Table 5, even after controlling for well-known anomalies, all the government dependency variables remain economically and statistically significant, with the couple of variables' significance levels dropping slightly from the models in Columns 1 through 4. After controlling for the well-known anomalies, a firm in the Top Three industry group that reports any government entity as a major customer earns, on average, 23 basis points more per month (2.76% per year) in next twelve months than government non-dependent firms, and a 10% increase in the ratio of sales to government entities to total sales of the firm for the year increases the firm's abnormal return by 5.4 basis points per month (0.65% per year).

Overall, the government dependency variables are both statistically and economically significant in predicting abnormal returns, both before and after controlling for well-known anomalies, and both when I separate the firms into three groups based on their MCAPs and when I treat the whole sample as a single group. When I separate the firms into three different groups based on the size of the firms, unlike other anomalies, government dependency has the stronger results across the three terciles - the medium-sized firms showing the strongest results.

B. Fama French Portfolios of Government Dependent Firms

Second method that I use to study the return predictabilities of my dependency variables is the sort methodology, which sorts firms based on the variable of interest, form different portfolios, and then performs the analysis on the returns of the portfolios. In my sort methodology, I again follow Fama and French (2008) while looking at the alphas of the portfolios of government dependent firms. To avoid the issue of micro-cap stocks unfairly influencing the equal-weighted portfolios, as I mentioned in the previous section, I keep my sample observations only if their stock prices are higher than $3. Furthermore, just as I do for the panel regressions approach, I split my sample of firms into three different sub-samples - small, medium, and large (representing the bottom, middle, and top 33% of my sample firms' MCAPs, respectively) - and perform the analysis of each of my dependency variables separately on each of the size group. However, I only present the results obtained from each of the size based sub-samples in which I use RPT_T3 as my sort variable and results obtained from

treating the whole sample as one group in which I use SRP_T3 as my sort variable.

Since RPT_T3 is a binary variable, looking at the returns across the spectrum of the RPT_T3 variable is not possible. Hence, I form just one portfolio of government dependent firms (firms whose RPT_T3 variable is 1) at the beginning of each month. Then, at the end of each month, I calculate the equal-weighted and value-weighted excess returns of the portfolio, value-weighting performed using the market capital (price times the share outstanding) of the firms for that month. I present the regression results of the returns of portfolios constructed based on RPT_T3 in each of the size group - small, medium, and large - on FFC factors in Table 6.

Even though I only show the FF three and FFC six factors alphas, the results are similar for CAPM, FFC four, and FF five factors alphas as well. All FF three and FFC six factors alphas, except for FFC six factors alpha of value weighted portfolio of large government dependent firms, are significant at 1% level regardless of whether I use equal weighted or value weighted portfolios. FF three and FFC six factors alphas of the portfolios of small, medium, and large government dependent firms are about 82, 96, and 66 basis points per month, respectively. Contrary to the usual finding that micro-cap stocks explain most of the anomalous abnormal returns, it seems that, in the case of government dependent firms, medium-size firms are the strongest in terms of earning abnormal returns.

In Table 7, I present the alphas of five quintile portfolios and the long-short hedged portfolio constructed using the SRP_T3 as the sort variable. Because the variable is continuous, I was able to put the firms into different quintiles depending on the value of the SRP_T3 variable. For each month in the sample period, I put government dependent firms into five quintiles based on their values of the SRP_T3 variable. Then, I calculate the portfolios' excess returns of each of the quintile portfolio and regress them against the FFC factors to obtain alphas. For each month, I also calculate the return to the strategy that goes long the quintile five portfolio and goes short the quintile one portfolio. The long-short portfolio earns statistically and economically significant CAPM, FF three, FFC four, FF five and, FFC six factors alphas regardless of whether I use equally weighted or value-weighted portfolios. Equally weighted hedged portfolios earn factor alphas of 111 basis points (FF five) to 53 basis points (CAPM) per month, whereas the value-weighted hedged portfolios earn factor alphas of 129 basis points (FF five) to 75 basis points (CAPM) per month. All FF and FFC factor alphas of the hedged portfolio both when equally weighted and value

weighted are significant at 1% level and CAPM alphas when equally weighted or value weighted are significant at 5% level. Among the quintile portfolios, the alphas are monotonically increasing from quintile 1 portfolios to quintile 5 portfolios (except in quintile 4 portfolios).

Overall, if I form the sort portfolios separately in each size group (small, medium, and large), as is the case with panel regressions, portfolios of medium-size government dependent firms earn the most economically and statistically significant FF or FFC factors alphas. The portfolios of government dependent firms earn economically and statistically significant FF three, FFC four, FF five, and FFC six factors alphas regardless of which dependency variable I use as the sort variable and regardless of whether I use equal- or value-weighted portfolios. However, the slope coefficients are not necessarily monotonically increasing on the value of all the dependency variables, SRP_T3 showing the most monotonic slope coefficients. In figure III, I show the evolution of $100 invested on January 1979 in market and in quintile 1 and 5 FF portfolios constructed using SRP_T3 as the sort variable; while the nominal value of market portfolio would have had $6K by the end of 2014, the quintile 5 value weighted portfolio would have had $3.3 million on the same date, evidence of significant return differential.

C. Robustness Check

With regard to robustness check of my results, some are incorporated in my analysis and some I performed additionally. To make sure that my results are not driven by micro firms, I split the sample into three different groups based on market capital and find my results even stronger in sub-samples. When I split samples into three groups based on time period, I find stronger results in 1990s and 2000s, evidence that my findings are recent and relevant. The presence of significant FFC six factors alphas with regard to both value and equally weighted portfolios of government dependent firms tells us that the results are not driven by some gigantic firms such as Apple. Also, my results are robust to different types of returns: raw returns, industry adjusted returns, or market excess returns.

Primary result of this paper is the positive wealth effects of government dependency. To study the return predictability of government dependency, I constructed the variables as such that they can provide the robustness check to one another. Re-

gardless of whether I define government dependency as binary status (RPT), or a monotonically increasing function of how long a firm has been government dependent (STR), or a monotonically increasing function of the percentage of the firms' sales that comes from the government (SLE), in my sample, government dependency is both statistically and economically significant at predicting cross-section of future returns.

Concerning my government dependency variables, my results are robust to changing the definitions of my dependency variables. My results are robust to redefined RPT to include less than one year or multiple years as the period to study wealth effects following the government reporting. My results are robust to STR and SRP being just the categorical variables that just count the number of government reporting and the number of surprise government reporting, respectively. Finally, my results robust to whether I apply decaying mechanism to the variables STR and SRP or not.

III. Potential Sources of Return Predictability

In my sample, I find that once a firm does the material business with any government entity, it is very likely that the firm will continue doing the business with government entities. 21% of the firms in my sample report government sales continuously until they are in my sample and 37% of the firms report government sales 75% of the time they are in my sample after their first reporting of government sales. Second, once a firm does the business with any government entities, it is very likely that the firm will be able to increase the sales to the government entities in future dates. In my sample where the sales dollars are available, out of the firms that at least reported the government sales twice within my sample period, about 43% of the firms were able to increase the sales to government entities by more than 100% and about 10% of the firms were able to increase the sales to government entities by more than 1,000%. Some hand-full of firms were able to increase the sales to government entities by more than 25,000% from their first reported government sales dollars. Below are the other potential sources of return predictability.

A. *Government-Firm Business Relations, Political Connections and the Winning of Government Contract*

In this section, I look at how the firms' probability of winning the material government contracts is impacted by having a political connection (as defined by Cooper et al. (2010)) and/or having had the material government contracts in the past (e.g. six or ten years ago). The paragraph 17.204(e) of the Federal Acquisition Regulation (FAR) says that *Unless otherwise approved in accordance with agency procedures, the total of the basic and option periods shall not exceed 5 years in the case of services, and the total of the basic and option quantities shall not exceed the requirement for 5 years in the case of supplies.* Hence, I lag my GOV_REP at least six years in my analysis to skip the contract tenure issue.

I present my *probit* analysis about firms' probability of winning a material government contract in Table 8. In Column 1 through 4, I show how the political connection variables developed by Cooper et al. (2010) are associated with the firms' probability to win the material government contracts. As the results tell us, all political connection variables are quite statistically significant and impact the politically connected firm's probability to win a material government contract positively. The results provide the evidence that channel by which politically connected firms benefit from government is by increasing their chances to win government contract. When I put all four variables used by Cooper et al. (2010) in one regression, PI^{Power} and $\text{PI}^{Ability}$ seems to win the horse race.

Next, I introduce one binary variable that is equal to 1 if a firm had the material government contracts 6 years ago (GOV_REP_{Lag76}) and second binary variable that is equal to 1 if a firm had the material government contracts 10 years ago (GOV_REP_{Lag120}). The variable is dummied out if a firm belongs to a FF 12 industry that never makes it to the Top Three industry group in my sample. After controlling for the political connection and other controls that has the potential to impact a firm's probability to win a material government contract, Column 6 and 7 of Table 8 tell us that a firm's probability to win the material government contracts goes up by 22.33% and 21.93% if the firm had the material government contracts six years ago and ten years ago, respectively. Even though I do not show the results here, a firm's probability to win the material government contracts goes up by 17.48% and 13.18% if the firm had the material government contracts fifteen years ago and twenty

years ago, respectively.

B. Changes in Firm Characteristics Post Government Reporting

To understand the abnormal returns earned by the government dependent firms, I further look into the differences in accounting characteristics and profitability measures - total assets, market capital, market share, profit, gross margin, net margin, cash flow, return on assets, leverage, implied tax rate, and implied federal tax rate [12] - between government dependent and government non-dependent firms and among government dependent firms pre and post government reporting. In the context of studying long-term firm characteristics between government dependent and non-dependent firms, my government dependent firms are all government dependent firms that belongs to all FF 12 industries that made it to TOP Three industry group at least once in my sample - industry 3, 6, 8, 10, and 12.

I calculate leverage, market share, and cash flow following the methodology used in Cooper et al. (2010). Leverage is the sum of the long-term debt and the debt in current liabilities divided by the total assets. Market share is a firm's total sales for the year divided by the total industry sales for that year. I use the FF 49 industry classification to designate firms to a particular industry. Cash flow is calculated as operating income before depreciation minus the sum of interest expenses, taxes, preferred dividends, and common dividends divided by the total assets. I calculate tax rate following the calculation in Faccio (2010). It is income tax total divided by the pretax income. Similarly, tax rate - federal is federal income tax divided by the pretax income. EBIT margin, gross margin, operating profit margin, and net margin are the earnings before interest and taxes divided by the total sales, gross profit divided by the total sales, operating income before depreciation divided by total sale, and net income (loss) divided by total sales, respectively. ROA is the operating income before depreciation divided by the total assets. Log assets and and log of market capital are natural logarithm of total assets and natural logarithm of price times share outstanding, respectively. All characteristics are then FF 49 industry median adjusted.

I present the results of two sample t tests of above firm characteristics between government dependent and non-dependent firms in Table 9, Column 2 and between

[12] Please refer to the appendix for more detail variable definitions.

pre and post government reporting among government dependent firms in Table 9, Column 3. Column 2 tells us that the government dependent firms in general are larger both in terms of total assets and in terms of market capital, enjoy higher market shares, have higher leverage, and have higher implied federal tax rates than government non-dependent firms. However, all profitabilities matrices tells us that they are less profitable firms in average if we consider their whole life span within the context of my sample.

Interesting results are in Table 9, Column 3, in which I present the change in firm characteristics post government reporting. Post government reporting the government dependent firms' total assets, market capital, and market share increase by big amounts and across almost all firms as implied by very high t stats. Post government reporting, these firms' leverage goes down and their implied tax rates - both overall and federal - head down. As shown by all profitability measures, their profitability completely turns around - all profit margins from gross margin to net margin improve quite a bit. Furthermore, both of their cash flow and return on assets increase quite significantly. And, all the changes in characteristics and profitability measures are highly statistically significant.

Novy-Marx (2013) found that profitable firms generate significantly higher returns compared to unprofitable firms, despite having higher valuation ratios. Beside, the impact of profitability on stock returns is so widely accepted that it is one of the factor in widely used FF five factor asset pricing model. Post government reporting, government dependent firms' profitability increases quite strongly, their assets and their market share increases, leverage goes down, and they pay lower taxes. One of the reason behind the return predictability of government dependent firms seems to be coming from the fact that government dependent firms' fundamentals improve quite a bit after they start getting government dollars.

IV. Abnormal Returns: Risk or Mispricing

The correlations between government dependency and future abnormal returns that I show in this paper are both statistically and economically significant in various settings. The results are not only significant but also material: the over-performance of medium-size government dependent firms in the Top Three industry group of about 12% above what is suggested by FFC six factors is significant when the equity market

premium is in the vicinity of 6% to 7%. Considering the results, it is natural to ask why such market over-performance exists when the relevant information is all public and is timely available. Why do investors, even over the course of weeks or even months, not adjust their expectations such that all the value related to the firms having government entities in the list of their material customers is reflected in the firms' stock prices? In short, are investors under-reacting to the information about the sales to the government entities reported by the firms or is it that they are getting compensated for bearing some kind of risks?

A. Are the Abnormal Returns due to Risk?

What risks or types of risks matter to stock prices and what risk factors are already priced in into the security prices is an everlasting debate among financial economists. However, it is pretty much consensual among the researchers in finance to use FF three or five factors or FFC four or six factors model as benchmark when calculating abnormal returns, but the wide usage of these models does not mean that those are the only risks that matter to security prices. Even though plethora of research in finance initiated by Lakonishok, Shleifer, and Vishny (1994) says that FF factors in fact might not even related to risks, assuming FFC factors capture some kind of risks, in this section, I use few proxies for some relevant additional risks that government dependent firms might be bearing and try to understand those firms' sensitivities to such additional risks to see whether the abnormal returns earned my government dependent firms in my sample is in fact a compensation for additional risks that these firms are bearing.

A.1. Political Economic Uncertainty Premium

Political economic uncertainty is one of the major risks that firms in any industry face. Because firms in my sample depend heavily on government spending, it is fair to assume that these firms are more sensitive to economic policy uncertainty than the rest of the market. To understand the sensitivity of government dependent firms to political economic uncertainty, I use the Economic Political Uncertainty, Government Spending, and Regulation Uncertainty indexes developed by Baker et al. (2016) and Geopolitical Risks developed by Dario Cladara and Matteo Lacoviello at the Federal Reserve Board as proxies for different forms of economic policy uncertainties and try

to understand the correlation between the variations in the returns of the government dependent firms and the variations in those indexes. The values of all indexes are available for download at *http://www.policyuncertainty.com*.

Economic Political Uncertainty is constructed from three types of underlying components: first quantifies newspaper coverage of policy-related economic uncertainty, second reflects the number of federal tax code provisions set to expire in future years, and third component uses disagreement among economic forecasters as a proxy for uncertainty. Government Spending Index is calculated counting the occurrence of words such as federal budget, budget battle, balanced budget, etc. and Regulation Uncertainty Index is calculated counting the occurrence of words such as glass-steagall, tarp, dodd-frank etc. in over 2,000 US newspapers. And, Geopolitical Risk Index is calculated counting the occurrence of words related to geopolitical tensions in 11 leading international newspapers.

I run univariate predictive regressions of monthly stock returns of stock i on each of those indexes on rolling 60 months basis. Each of the sensitivity measure with respect to each of the indexes is then the absolute value of slope coefficient from each of those four regressions. I present the results of two sample t test of each of the sensitivity measures between government dependent and non-dependent firms in Table 10, Columns 3 to 6. Sensitivity measures of government dependent firms when compared with government non-dependent firms with regard to economic political uncertainty, geopolitical risks, government spending, and regulation uncertainty are higher by 26%, 25%, 13%, and 29%, respectively and all differences are very highly statistically significant, evidence suggestive of government dependent firms bearing the additional risks.

A.2. Abnormal Returns during US Presidential Elections and Post Elections Years

I present small excerpts from the 10-Ks of two of the government dependent firms in Figures IV and V. For Vectrus Inc., presented in Figure IV, 100% of the revenue comes from the US government; for Teledyne Technologies, presented in Figure V, 25% of the revenue comes from the US government. In its 10-K, Teledyne talks about the US government terminating its contracts for convenience (an atypical feature for the contracts found in the corporations). The 10-K of Vectrus discusses how its revenue is dependent on the US government's presence and operations in

Afghanistan and how it is exposed to any budgetary change in US defense. In this context, investors face additional layer of uncertainty when processing the information provided by the firms' reporting of any government entity as a customer. They may lack the critical knowledge to evaluate the provisions in government contracts such as the flexibility to terminate the contracts at the government's convenience or the US government's future policies about defense; in most cases, the defense policies are kept secret. Thus, despite being rational, investors face incomplete information about the change in a firm's value as a result of doing business with government entities and they need to be compensated for bearing those additional layer of risks.

As the direction of future government policies becomes even more uncertain, these uncertainties are at peak during the time periods right before the US presidential election years and get somewhat resolved in post election years. So, I hypothesize that if the government dependent firms are truly earning abnormal returns due to the additional political uncertainty risks they are bearing then their returns should be higher when the political environment is more uncertain. To test my hypothesis, I divide my sample into presidential election years, two years leading to the elections, and post presidential election years, two years followed by the elections.

As evident in the first two columns of Table 10, almost all the return differential between government dependent and non-dependent firms comes almost exclusively from election years - average monthly returns of government dependent firms is 50% higher than the non-dependent firms during election years but during the post-election years the return differential is only 0.55%, or ninty-one fold decrease from election years. This evidence in return differential between government dependent and non-dependent firms during election and post-election years supports the view that the abnormal returns earned by the government dependent firms is a compensation for bearing some kind of additional political uncertainty risks.

A.3. Tail Risks and Idiosyncratic Volatility

There is ample evidence that politically connected firms get some helping hand from government in bad times and government spending provides stabilizing effect in recession times to the firms that do business with government[13]. These evidences suggest that government dependent firms might bear some additional tail risks than

[13]See Faccio et al. (2006), Goldman (2016)

non-dependent firms and having a business relation with government entities can work as a hedge to such tail risks.

I calculate monthly tail risk measure using Kelly and Jiang (2014). The paper estimates the time-varying component of return tails, λ_t, month-by-month by applying the power law estimator of Hill et al. (1975) to the set of daily return observations for all stocks in month t [14].

Then, I run univariate predictive regressions of monthly stock returns of stock i on tail risk measure on rolling 120 months basis. My tail risk sensitivity measure is the absolute value of the slope coefficient of such regression. As shown in Table 10, Column 8, the tail risk sensitivity of government dependent firms is statistically significantly different than the tail risk sensitivity of government non-dependent firms, the sensitivity of government dependent firms higher by 28%, another evidence of the risk story.

Even though Ang, Hodrick, Xing, and Zhang (2006) found a negative relation between idiosyncratic volatility and later Bali and Cakici (2008) found no robustly significant relation between idiosyncratic volatility and expected returns, there is very strong theoretical and empirical evidences about the positive relationship between idiosyncratic volatility and stock returns [15]. Government dependent firms' abnormal returns with respect to FF factors might be just a compensation for bearing additional idiosyncratic volatility risks.

Following Ang et al. (2006), I calculate idiosyncratic volatility relative to FF three factor model [16]. Then, I again run univariate predictive regressions of monthly stock returns of stock i on idiosyncratic volatility measure on rolling 60 months basis. My sensitivity to idiosyncratic volatility is the absolute value of the slope coefficient of such regression. As shown in Table 10, Column 7, the sensitivity to idiosyncratic volatility of government dependent firms is statistically significantly different than the sensitivity to idiosyncratic volatility of government non-dependent firms, the sensitivity to idiosyncratic volatility of government dependent firms higher by 16%, yet another evidence of risk story.

[14] Their formula takes the form, $\lambda_t^{Hill} = \frac{1}{K_t}\sum_{k=1}^{K_t} ln\frac{R_{k,t}}{u_t}$, where $R_{k,t}$ is the kth daily return that falls below an extreme value threshold u_t during month t, and K_t is the total number of such exceedences within month t.

[15] See Levy (1978), Merton (1987), Tinic and West (1986), Malkiel and Xu (1997), Xu and Malkiel (2003)

[16] I first run the regression, $Return_t^i = \alpha^i + \beta_{MKT}^i MKT + \beta_{SMB}^i SMB + \beta_{HML}^i HML + \epsilon_t^i$.Then, idiosyncratic volatility is defined as $\sqrt{var(\epsilon_t^i)}$ in above equation.

B. Are the Abnormal Returns due to Mispricing?

Whether the abnormal returns earned by anomalies such as value are due to risk or mispricing is a very hot topic among financial researchers for decades. With the rise of behavioral finance as a prominent sub-field under finance, there are abundance of mispricing theories and evidences that support the view that anomalies returns may be are due to the suboptimal behavior of investors, mainly overreaction and underreation to certain information.

B.1. Price Efficiency

If you assume that information comes to the market randomly and stock prices immediately reflect the new information, the stock prices should follow random walk, behavior of most efficient prices. When the prices do not reflect the information in timely manner, prices become inefficient, mispricing occurs, and profit opportunities arises for informed investors. Since the price inefficiency causes mispricing, price efficiency measures can provide a sense of how mispriced a stock price really is.

I calculate the stock price efficiency using two prominent methods: variance ratio tests of Lo and MacKinlay (1988) and price delay measure of Hou and Moskowitz (2005). Variance ratio tests of Lo and MacKinlay (1988) is based on the mathematical property that if prices are random we can write $P_t = P_{t-1} + \epsilon_r$, where P_t is today's price, P_{t-1} is the previous period's price, and ϵ_r is a random error term, and the variance of random error term is liner in time [17]. Price delay measure of Hou and Moskowitz (2005) is based on the predictability of weekly returns of market portfolio on the weekly returns of individual stocks [18].

As I show in Table 11, Columns 1 and 2, difference in price delay measure and variance ratios between government dependent firms and non-dependent firms is very highly statistically significant. Price delay measure and variance ratios of government dependent firms are lower by 5% and 10%, respectively, evidence that stock mispricing among government dependent firms is actually lower than that of government non-dependent firms.

[17] The estimators of Lo and MacKinlay (1988) are: (1) $\hat{\mu} = \frac{1}{n}\sum_{k=1}^{n}((P_k) - P_{k-1})$, (2) $\bar{\sigma}_a^2 = \frac{1}{n-1}\sum_{k=1}^{n}(P_k - P_{k-q} - \hat{\mu})^2$, (3) $\bar{\sigma}_a^2 = \frac{1}{m}\sum_{k=q}^{n}(P_k - P_{k-1} - \hat{\mu})^2$, and (4) $m = q(n-q+1)(1-\frac{q}{n})$. Then, the variance ratio $VR_q = \frac{\hat{\sigma}_q}{\hat{\sigma}_a} - 1$, where I used $q = 4$.

[18] I first run two regressions: (1) $r_{j,t} = \alpha_j + \beta_j R_{m,t} + \sum_{n=1}^{4}\delta_j^{-n} R_{m,t-n} + \epsilon_{j,t}$, and (2) $r_{j,t} = \alpha_j + \beta_j R_{m,t} + \epsilon_{j,t}$. Then the price delay measure is $1 - \frac{R^2(Reg.(2))}{R^2(Reg.(1))}$.

B.2. Information Uncertainty Proxies

Mispricing of securities occurs when investors under- or over-react to new information. Zhang (2006) finds that investors underreact to a higher degree when there is a grater information uncertainty. The paper concludes that the degree of incompleteness of the market reaction increases monotonically with the level of information uncertainty, suggesting that investors tend to underreact more to new information when there is more ambiguity with respect to its implications for firm value. He uses six proxies for information uncertainty: firm size, firm age, analyst coverage, dispersion in analyst earnings forecasts, stock volatility, and cash flow volatility. Since the stock volatility used by Zhang (2006) is very close to the idiosyncratic volatility and since financial theory suggests that it is more of a risk than bias, I use rest of the five proxies used by Zhang (2006) as my proxies for level of possible mispricing for individual securities.

I present the results of two sample t tests of each of the information uncertainty proxies between government dependent and non-dependent firms in Table 11, Columns 3 to 7. With respect to three proxies - reciprocal of firm age, reciprocal of analyst count, and standard deviation of cash flow - the value of information uncertainty proxies of government dependent firms are actually statistically significantly lower than the proxies of non-dependent firms, information proxy values of reciprocal of firm age, reciprocal of analyst count, and standard deviation of cash flow of government dependent firms lower by 44%, 10%, and 11%, respectively, than that of government non-dependent firms. With respect to the proxy analyst forecast dispersion, even though the proxy values of government dependent firms is on average lower than that of government non-dependent firms, difference is not statistically significant. Reciprocal of Market Value is the only information uncertainty proxy in which government dependent firms on average have higher values than that of government non-dependent firms. Information uncertainty proxies support the view that stock mispricing among government dependent firms is actually lower than that among government non-dependent firms, evidence against mispricing story.

B.3. Aggregate Sentiment

Several theories have been developed to explain why and how investors over- or under-react. Daniel, Hirshleifer, and Subrahmanyam (1998), for example, says

that investors are overconfident about their private information and overreact to it - investors disproportionately attributing success to their skills and disproportionately attributing failures to the external noise. Such theories predict that level of mispricing in the market is directly correlated with the level of investors' overconfidence.

I use two forms of investors' sentiment or overconfidence level - sentiment index used by Baker and Wurgler (2006) and market states used by Cooper et al. (2004) - to study whether the abnormal returns earned by the government dependent firms are related to the aggregate level of mispricing in the market. Sentiment Index of Baker and Wurgler (2006) is based on first principal component of five (standardized) sentiment proxies where each of the proxies has first been orthogonalized with respect to a set of six macroeconomic indicators (equation 3 of Baker and Wurgler (2006)) and market state of Cooper et al. (2004) is the returns of the value weighted CRSP index over months *t - 36* to *t - 1*. As I show in Table 11, columns 8 and 9, the difference between sensitivities of government dependent and non-dependent firms with respect to market states and sentiment index is statistically significant, sensitivity of government dependent firms with respect to market state and sentiment index higher by 19% and 17%, receptively, when compared with government non-dependent firms.

Overall, the risk versus mispricing analysis strongly supports the view that the abnormal returns earned by government dependent firm is actually a compensation for unaccounted risks that they are bearing. All of my risks proxies unanimously suggests that government dependent firms are more riskier than government non-dependent firms. With regard to mispricing proxies, majority of the proxies suggests that mispricing among government dependent is actually lower than that among government non-dependent firms, again the evidence that unaccounted risks might be the primary factor behind government dependent firms' abnormal returns.

C. Discussion: Abnormal Returns within the Context of Equilibrium

Caskey (2009) demonstrated that persistent mispricing is consistent with a market that includes ambiguity-averse investors. The paper claimed that ambiguity-averse investors may prefer to trade based on aggregate signals that reduce ambiguity at the cost of a loss in information, and equilibrium prices may therefore fail to impound publicly available information. Investors with these preferences prefer aggregate information even when they have free access to disaggregate information. A summary

signal, while reducing investor's exposure to ambiguity, reduces the information content. If we assume that the economy has abundance of ambiguity-averse investors then the disaggregate firm level information about the firms' dependency on the government entities is worthless and hence the stock prices of government dependent firms do not adjust in timely manner after their government reporting.

The "rational structural uncertainty" theory of Brav and Heaton (2002) maintains the complete rationality assumption but relaxes the assumption that investors have complete knowledge of the fundamental structure of the economy; thus, investors still make optimal decisions but lack the critical structural knowledge. In this context, investors may be rationally processing the information provided by the firms' reporting of any government entity as a customer, but they lack the critical knowledge about the economy to evaluate the value of the provisions in government contracts such as the flexibility to terminate the contracts at the government's convenience or the US government's future policies about defense. Thus, despite being rational, investors face incomplete information about the change in a firm's value as a result of doing business with government entities.

In short, the abnormal returns that I find for government dependent firms are not consistent with market efficiency or with the traditional frameworks of rational investors, but they are consistent with the assumption of Caskey (2009) that investors are ambiguity-averse, as well as within the context of "rational structural uncertainty" of Brav and Heaton (2002).

V. Conclusion

Due to statutory requirements, U.S. firms are required to report any material customer that accounts for at least 10% of their sales. Taking advantage of this mandatory segment reporting by the U.S. firms, I identify government dependent firms (i.e. firms that receive at least 10% of their sales revenues from US domestic, state, local, or foreign governments). Then, I construct several variables that capture different aspects of firms' government dependency that investors most likely to care about such as whether a firm is government dependent or not, if dependent what percentage of its sales dollars come from the government, for how long the firm has been government dependent, and how consistently the firm has been government dependent over the years. Then, I study the return predictabilities of those dependency

variables.

I find all of my dependency variables both statistically and economically significant at predicting the cross-section of future returns. Among the sub-samples created based on the size of the firms (small, medium, and large) in my sample, the results are stronger in the sub-samples of small- and medium-sized firms - medium sized government dependent firms, on average, earning the abnormal returns of up to 80 basis points and the portfolio of medium sized government dependent firms earning the FFC six factors alpha of up to 98 basis points per month for the year following the government reporting when compared to government non-dependent firms.

Further analysis reveals that when compare to the characteristics of government dependent firms pre government reporting, the firms post government reporting become highly profitable, significantly larger both in terms of assets and market capital, increases their market share, lower their leverage, and have lower implied tax rates - both overall and federal. Also, their probability to win the material government contracts increases, e.g. having the material government contracts 10 years back increases their probability to win the material government contracts by 21.93%.

Since the abnormal returns are significant, next I try to understand whether the returns are due to some unaccounted risks or due to mispricing. To analyze risks story, I looked at the government dependent firms' returns two years leading to US presidential elections versus two years post elections, looked at these firms' sensitivities to few political uncertainty indexes developed by Baker et al. (2016), tail risks, and idiosyncratic risks. To analyze mispricing story, I used price efficiency measures, information uncertainty proxies developed by Zhang (2006), and aggregate sentiment indexes as proxies for mispricing. I find the evidences more supportive of unaccounted risks story than the mispricing story.

Government spending that makes its way to corporate America as the revenue to firms not only provides stabilizing effects to the local economy and significantly affects employment, welfare, migration, income, and wages and but also increases the value of the firms that do depend on government entities for significant portion of their revenue. Government dependency helps firms to be larger and more profitable, helping them to earn abnormal returns to their investors.

REFERENCES

Aggarwal, Rajesh K, Felix Meschke, Tracy Yue Wang, et al., 2012, Corporate political donations: Investment or agency, *Business and Politics* 14, 3.

Ang, Andrew, Robert J Hodrick, Yuhang Xing, and Xiaoyan Zhang, 2006, The cross-section of volatility and expected returns, *The Journal of Finance* 61, 259–299.

Ansolabehere, Stephen, John M De Figueiredo, and James M Snyder, 2003, Why is there so little money in us politics?, *The Journal of Economic Perspectives* 17, 105–130.

Ansolabehere, Stephen, James M Snyder Jr, and Michiko Ueda, 2004, Did firms profit from soft money?, *Election Law Journal* 3, 193–198.

Baker, Malcolm, and Jeffrey Wurgler, 2006, Investor sentiment and the cross-section of stock returns, *The Journal of Finance* 61, 1645–1680.

Baker, Scott R, Nicholas Bloom, and Steven J Davis, 2016, Measuring economic policy uncertainty, *The Quarterly Journal of Economics* 131, 1593–1636.

Bali, Turan G, and Nusret Cakici, 2008, Idiosyncratic volatility and the cross section of expected returns, *Journal of Financial and Quantitative Analysis* 43, 29–58.

Boubakri, Narjess, Jean-Claude Cosset, and Walid Saffar, 2012a, The impact of political connections on firmsoperating performance and financing decisions, *Journal of Financial Research* 35, 397–423.

Boubakri, Narjess, Omrane Guedhami, Dev Mishra, and Walid Saffar, 2012b, Political connections and the cost of equity capital, *Journal of Corporate Finance* 18, 541–559.

Brav, Alon, and John B Heaton, 2002, Competing theories of financial anomalies, *Review of Financial Studies* 15, 575–606.

Caskey, Judson A, 2009, Information in equity markets with ambiguity-averse investors, *Review of Financial Studies* 22, 3595–3627.

Chodorow-Reich, Gabriel, Laura Feiveson, Zachary Liscow, and William Gui Woolston, 2012, Does state fiscal relief during recessions increase employment? evidence from the american recovery and reinvestment act, *American Economic Journal: Economic Policy* 4, 118–145.

Cohen, Lauren, and Christopher J Malloy, 2016, Mini west virginias: Corporations as government dependents, *Available at SSRN* .

Cooper, Michael J, Huseyin Gulen, and Alexei V Ovtchinnikov, 2010, Corporate political contributions and stock returns, *The Journal of Finance* 65, 687–724.

Cooper, Michael J, Huseyin Gulen, and Michael J Schill, 2008, Asset growth and the cross-section of stock returns, *The Journal of Finance* 63, 1609–1651.

Cooper, Michael J, Roberto C Gutierrez, and Allaudeen Hameed, 2004, Market states and momentum, *The Journal of Finance* 59, 1345–1365.

Cull, Robert, and Lixin Colin Xu, 2005, Institutions, ownership, and finance: the determinants of profit reinvestment among chinese firms, *Journal of Financial Economics* 77, 117–146.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam, 1998, Investor psychology and security market under-and overreactions, *the Journal of Finance* 53, 1839–1885.

Faccio, Mara, 2006, Politically connected firms, *The American economic review* 96, 369–386.

Faccio, Mara, 2010, Differences between politically connected and nonconnected firms: A cross-country analysis, *Financial management* 39, 905–928.

Faccio, Mara, Ronald W Masulis, and John McConnell, 2006, Political connections and corporate bailouts, *The Journal of Finance* 61, 2597–2635.

Fama, Eugene F, 1998, Market efficiency, long-term returns, and behavioral finance, *Journal of financial economics* 49, 283–306.

Fama, Eugene F, and Kenneth R French, 2008, Dissecting anomalies, *The Journal of Finance* 63, 1653–1678.

Goldman, Eitan, Jörg Rocholl, and Jongil So, 2009, Do politically connected boards affect firm value?, *Review of Financial Studies* 22, 2331–2360.

Goldman, Eitan, Jörg Rocholl, and Jongil So, 2013, Politically connected boards of directors and the allocation of procurement contracts, *Review of Finance* rfs039.

Goldman, Jim, 2016, Government as customer of last resort: The stabilizing effect of government purchases of firms "Working Paper".

Hellman, Joel S, Geraint Jones, and Daniel Kaufmann, 2000, Seize the state, seize the day: State capture, corruption and influence in transition, *World Bank policy research working paper* .

Hill, Bruce M, et al., 1975, A simple general approach to inference about the tail of a distribution, *The annals of statistics* 3, 1163–1174.

Hou, Kewei, and Tobias J Moskowitz, 2005, Market frictions, price delay, and the cross-section of expected returns, *The Review of Financial Studies* 18, 981–1020.

Joh, Sung Wook, Ming Ming Chiu, et al., 2004, Loans to distressed firms: Political connections, related lending, business group affiliation and bank governance, in *Econometric Society 2004 Far Eastern Meetings*, number 790, Econometric Society.

Johnson, Simon, and Todd Mitton, 2003, Cronyism and capital controls: evidence from malaysia, *Journal of financial economics* 67, 351–382.

Kelly, Bryan, and Hao Jiang, 2014, Tail risk and asset prices, *The Review of Financial Studies* 27, 2841–2871.

Khwaja, Asim Ijaz, and Atif Mian, 2005, Do lenders favor politically connected firms? rent provision in an emerging financial market, *The Quarterly Journal of Economics* 1371–1411.

Kroszner, Randall S, and Thomas Stratmann, 1998, Interest-group competition and the organization of congress: theory and evidence from financial services' political action committees, *American Economic Review* 1163–1187.

Lakonishok, Josef, Andrei Shleifer, and Robert W Vishny, 1994, Contrarian investment, extrapolation, and risk, *The journal of finance* 49, 1541–1578.

Levy, Haim, 1978, Equilibrium in an imperfect market: A constraint on the number of securities in the portfolio, *The American Economic Review* 68, 643–658.

Lo, Andrew W, and A Craig MacKinlay, 1988, Stock market prices do not follow random walks: Evidence from a simple specification test, *The review of financial studies* 1, 41–66.

Malkiel, Burton G, and Yexiao Xu, 1997, Risk and return revisited, *The Journal of Portfolio Management* 23, 9–14.

Merton, Robert C, 1987, A simple model of capital market equilibrium with incomplete information, *The journal of finance* 42, 483–510.

Novy-Marx, Robert, 2013, The other side of value: The gross profitability premium, *Journal of Financial Economics* 108, 1–28.

Roberts, Brian E, 1990, A dead senator tells no lies: Seniority and the distribution of federal benefits, *american Journal of Political science* 31–58.

Serrato, Juan Carlos Suárez, and Philippe Wingender, 2014, Estimating the incidence of government spending, Technical report, "Working Paper".

Shoag, Daniel, 2012, The impact of government spending shocks: Evidence on the multiplier from state pension plan returns "Harvard University, Working Paper".

Tinic, Seha M, and Richard R West, 1986, Risk, return, and equilibrium: A revisit, *Journal of Political Economy* 94, 126–147.

Wilson, Daniel J, 2012, Fiscal spending jobs multipliers: Evidence from the 2009 american recovery and reinvestment act, *American Economic Journal: Economic Policy* 4, 251–282.

Xu, Yexiao, and Burton G Malkiel, 2003, Investigating the behavior of idiosyncratic volatility, *The Journal of Business* 76, 613–645.

Zhang, X, 2006, Information uncertainty and stock returns, *The Journal of Finance* 61, 105–137.

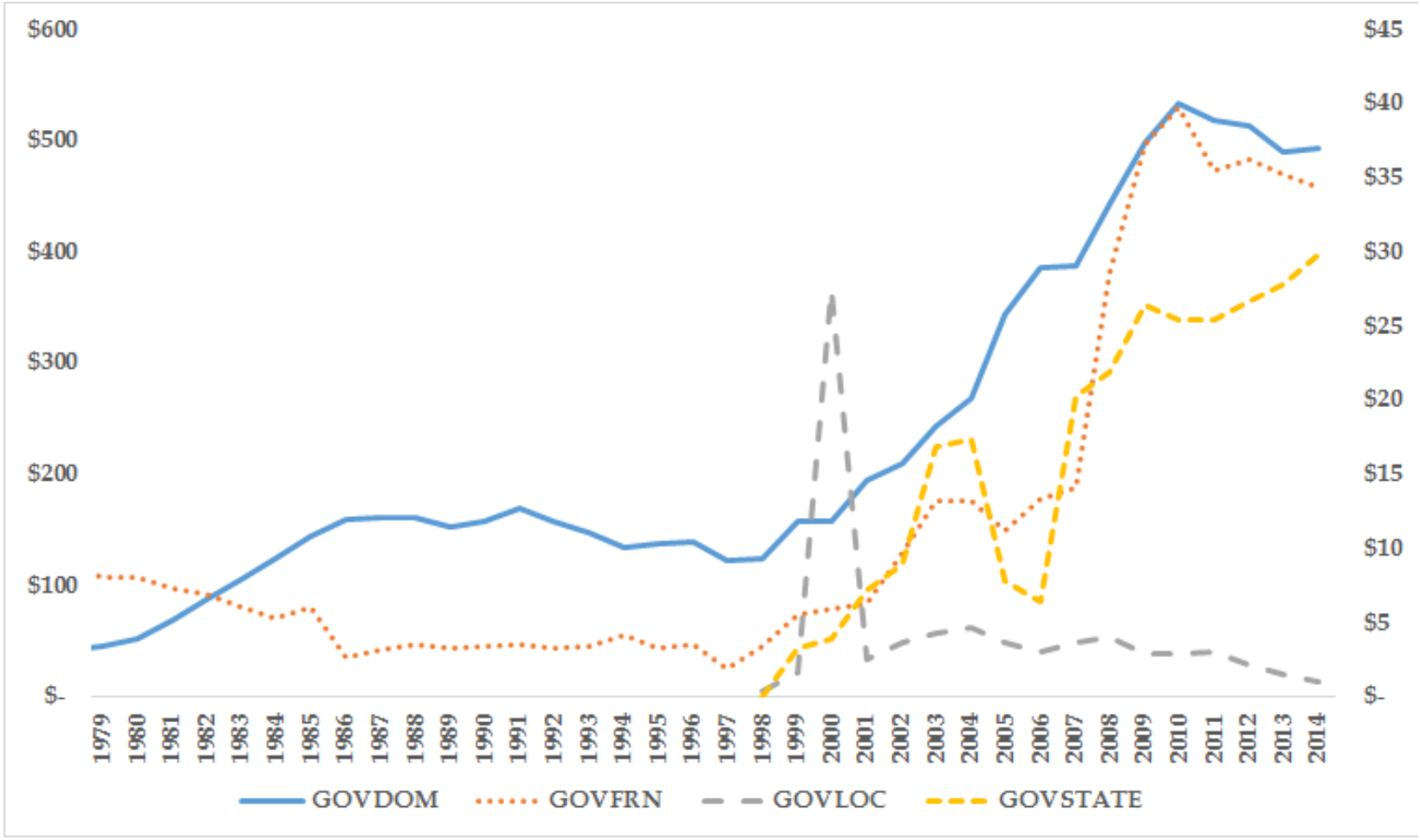

Fig I: Sales to Government Entities. GOVDOM is for US domestic government and is plotted using left axis. GOVFRN, GOVLOC, and GOVSTATE are for foreign governments, US local governments, and US state governments accordingly and all three are plotted using right axis.

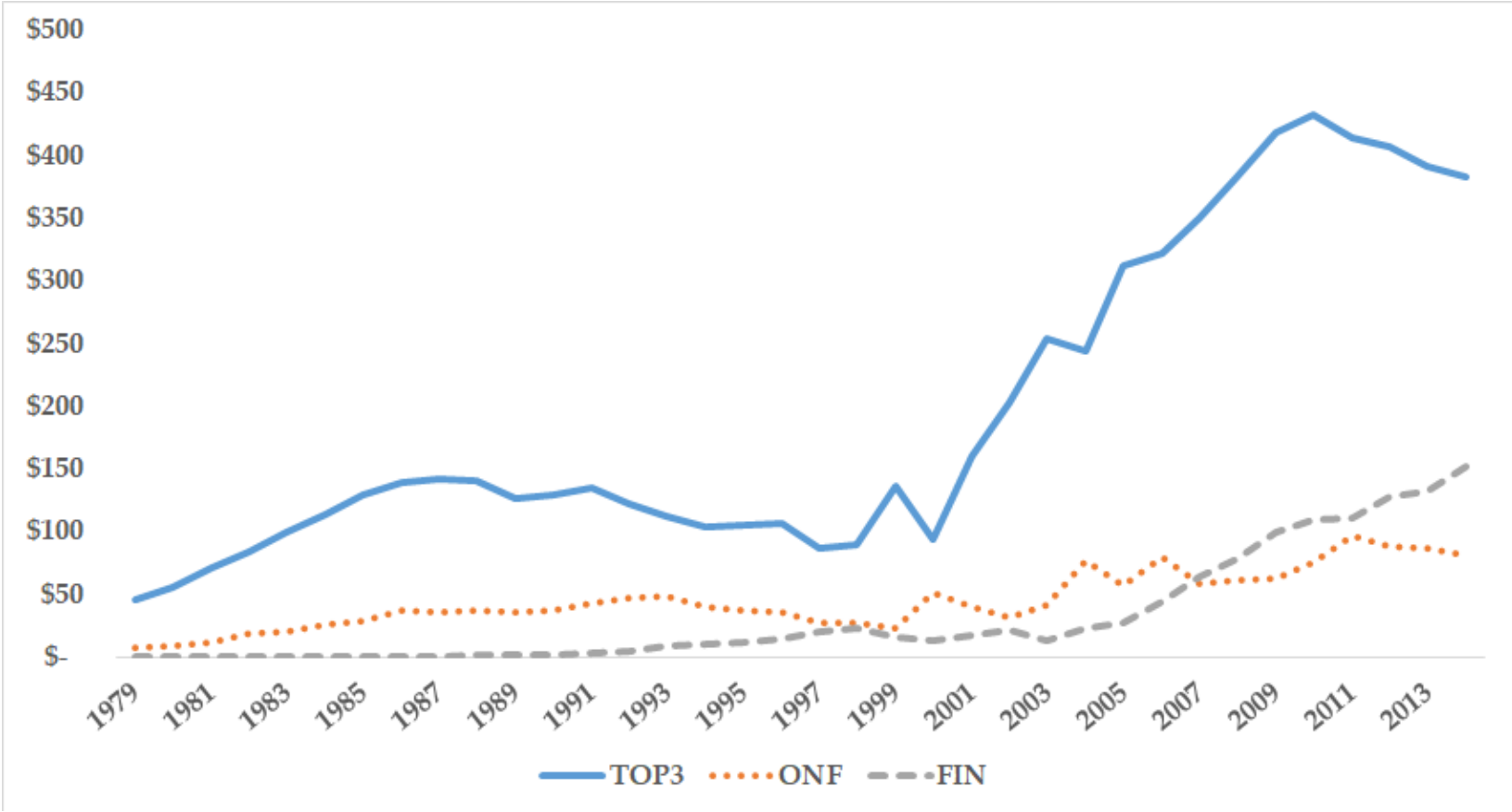

Fig II: Sales to Government Entities by Industry Grouping. TOP3 are Top Three FF 12 industries that had most dollar sales to government entities in previous year, FIN is for Financials, and ONF are rest of the eight FF 12 industries.

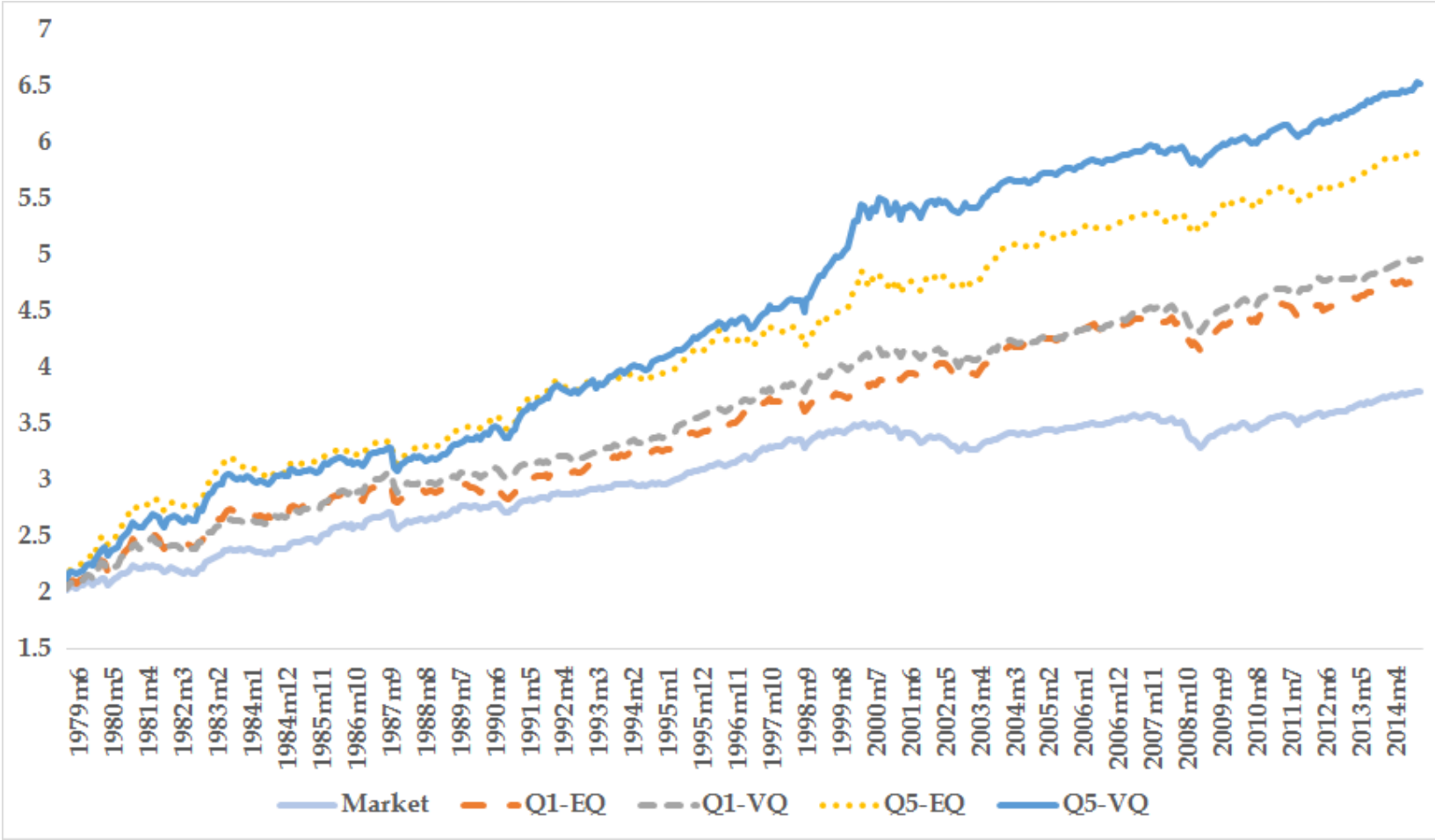

Fig III: Log of Cumulative Wealths of $100 Invested on January 1979 on Different Portfolios. Market is the CRSP value weighted portfolio. Q1-EQ and Q1-VQ are equally weighed and value weighted quintile one portfolios of government dependent firms. Q5-EQ and Q5-VQ are equally weighed and value weighted quintile five portfolios of government dependent firms. At the beginning of each month, I sort all the government dependent firms in five quintiles based on their SRP_T3 values at month $t-1$. Next, I form five quintile portfolios of government dependent firms that go long the stocks that fall within their corresponding groups. Then, at the end of each month, I calculate the equal weighted and the value weighted returns of all those portfolios. With respect to nominal values, Market, Q1-VQ, and Q5-VQ portfolios would have ended up with $6,156, $92,467, and $3,342,241, respectively by the end of 2014.

Vectrus, Inc.

Customers

We attribute the strength of our relationship with the DoD and other branches of the U.S. government to our focus on program performance, global responsiveness and operational excellence, as well as our core values of integrity, respect and responsibility. Our primary customer is the DoD. Our revenue from the U.S. government for the periods presented below was as follows:

	Year Ending December 31,		
(In thousands)	2014	2013	2012
DoD	$ 1,172,018	$ 1,473,830	$ 1,790,020
Other U.S. government[1]	31,251	37,808	38,344
Total Revenue	$ 1,203,269	$ 1,511,638	$ 1,828,364

	December 31,		
Contract type	2014	2013	2012
Firm-Fixed-Price	24%	28%	25%
Cost-Plus and Cost Reimbursable [1]	76%	72%	75%
Total Revenue	100%	100%	100%

[1] Includes time and material contracts

Risks Relating to Our Business

We face the following risks in connection with the general conditions and trends of the industry in which we operate:

We are dependent on the U.S. government's presence and operations in Afghanistan for a material portion of our revenue and operating income, and the announced withdrawal of military personnel and suspension or removal of funding for security and training activities in the region by the U.S. government may have an adverse effect on our revenue and operating income prospects.

A decline in the U.S. government defense budget, changes in spending or budgetary priorities or delays in contract awards may significantly and adversely affect our future revenue and limit our growth prospects. Further, because we depend on U.S. government contracts, a delay in the completion of the U.S. government's budget process could delay procurement of the services and solutions we provide and have an adverse effect on our future revenue.

We may not be successful in winning new contracts, which will have an adverse impact on our business and prospects.

Fig IV: Excerpts for 2014 10K. Vectrus offers services including infrastructure asset management, logistics and supply chain management and 100% of its revenue comes from U.S. Government.

TELEDYNE TECHNOLOGIES INCORPORATED

Approximately 25%, 27% and 32% of our total sales for 2014, 2013 and 2012, respectively, were derived from contracts with agencies of, and prime contractors to, the U.S. Government. Information on our sales to the U.S. Government, including direct sales as a prime contractor and indirect sales as a subcontractor, is as follows (in millions):

	2014	2013	2012
Instrumentation	$ 38.6	$ 40.6	$ 39.9
Digital Imaging	102.2	120.2	128.8
Aerospace and Defense Electronics	245.3	260.2	269.9
Engineered Systems	221.8	209.2	245.4
Total U.S. Government sales	$607.9	$630.2	$684.0

Our principal U.S. Government customer is the U.S. Department of Defense. These sales represented 20%, 21% and 26% of our total sales for 2014, 2013 and 2012, respectively. In 2014 and 2013, our largest program with the U.S. Government was the Objective Simulation Framework contract with the Missile Defense Agency, which represented 1.3% and 1.4% of our total sales, respectively. In 2012, our largest program with the U.S. Government was the Systems Development and Operations Support contract with NASA's Marshall Space Flight Center, which represented 1.9% of our total sales in 2012.

As described under risk factors, there are risks associated with doing business with the U.S. Government. In 2014, approximately 58% of our U.S. Government prime contracts and subcontracts were fixed-price type contracts, compared to 60% in 2013 and 59% in 2012. Under these types of contracts, we bear the inherent risk that actual performance cost may exceed the fixed contract price. Such contracts are typically not subject to renegotiation of profits if we fail to anticipate technical problems, estimate costs accurately or control costs during performance. Additionally, U.S. Government contracts are subject to termination by the U.S. Government at its convenience, without identification of any default. When contracts are terminated for convenience, we typically recover costs incurred or committed, settlement expenses and profit on work completed prior to termination. We had three U.S. Government contracts terminated for convenience in 2014, compared with four in 2013 and six in 2012.

Fig V: Excerpts for 2014 10K. Teledyne provides enabling technologies for industrial markets. About 25% of its revenue comes from U.S. Government.

Table 1:
Correlations and Summary Statistics

RPT (report) is a binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm does the government reporting. The variable STR (strength) is the number of times a firm does the government reporting till date divided by the number of months the firm is in the sample since it's first government reporting. SRP (surprise) is the number of surprise government reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm to date divided by the number of months the firm is in the sample since it's first government reporting. And, SLE (sale) is a firm's total sales to all government entities as a percentage of the firm's total sales for the year. All the variables are then interacted with Top Three industry group dummy, signified by the subscript _T3, which is equal to 1 if the firm is in Top Three industry group, three FF12 industries, except finance, that has the most sales to the government entities in the previous year. Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

Panel A: Correlations Among Relationship Variables

	RPT_T3	STR_T3	SRP_T3	SLE_T3
RPT_T3	1			
STR_T3	0.773	1		
SRP_T3	0.360	0.225	1	
SLE_T3	0.621	0.546	0.119	1

Panel B: Summary Statistics

VARIABLES	Mean	Std. Dev	Min	25th Percentile	Median	75th Percentile	Max
No. of Govt. Reporting	6.303	6.510	1	1	4	9	37
RPT_T3	0.560	0.496	0	0	1	1	1
STR_T3	0.056	0.069	0	0.026	0.063	0.079	9
SRP_T3	0.019	0.030	0	0.006	0.011	0.022	1
SLE_T3	18.430	26.470	0	0	10	25	100

Table 2:
Summary Statistics of Government Dependent and Non_Dependent Firms by FF 12 Industries

AT is total assets. AT_G is year over year assets growth. MCAP is market capital calculated as price (*prc*) times share outstanding (*shrout*) at the end of the month *t*. PROD is productivity calculated following Faccio (2010). LEV is leverage calculated as the sum of the debt in current liabilities total (*dlc*) and long term debt total (*dltt*) divided by the assets total (*at*). BM is book-to-market calculated as in Cooper et al. (2010). ROE is income before extraordinary items (*ib*) divided by common ordinary equity total (*ceq*). CF is cashflow calculated as operating income before depreciation (*oibdp*) minus the sum of interest (*xint*), income taxes total (*txt*), dividends - preferred (*dvp*), and dividends - common (*dvc*) divided by assets total (*at*). EBIT_MAR is EBIT margin calculated as earning before interest and taxes (*ebit*) divided by sales_turnover (net)(*sale*). GM is gross margin calculated as gross profit (*gp*) divided by sales_turnover (net)(*sale*). TAX is income tax total (*txt*) divided by pretax income (*pi*), and BHR12 is past 12 months' buy-and-hold return. DEP., NON_DEP. and GOVT. SALES are number of government dependent firms and government non-dependent firms, and average yearly sales to government entities in millions by government dependent firms, respectively. Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

Panel A: Fundamental Descriptive Statistics

		Non_Dur	Durable	Manuf.	Oil & Gas	Chemicals	Bus Eqp	Ph. & TV	Utilities	Whole_Ret	Healthcare	Finance	Other
AT	NGOV	1,988	7,951	1,672	7,872	2,325	1,215	9,966	4,615	1,608	1,254	21,925	2,291
	GOV	2,917	2,391	2,861	6,633	6,873	2,279	20,088	7,588	1,906	2,464	13,143	4,479
		-14.527	15.707	-36.253	4.128	-44.140	-37.060	-26.279	-34.747	-6.154	-26.333	9.884	-21.167
AT_G		0.132	0.489	0.138	0.232	0.135	0.258	0.295	0.139	0.183	0.334	0.181	0.258
		0.140	0.118	0.115	0.178	0.086	0.211	0.299	0.078	0.193	0.286	0.205	0.181
		-2.266	2.058	8.661	8.075	9.837	10.005	-0.153	24.897	-1.634	6.666	-2.279	6.058
MCAP		1,992	1,359	903	4,163	1,904	1,941	3,853	1,262	1,520	1,846	1,230	1,212
		2,820	1,268	2,077	4,065	7,980	2,626	8,228	2,949	2,176	3,798	2,371	2,435
		-9.077	1.686	-54.790	0.465	-43.597	-12.543	-23.067	-53.294	-10.574	-28.249	-24.976	-24.289
PROD		1.106	1.032	1.030	1.224	1.164	1.226	0.984	0.942	1.115	0.766	0.902	0.956
		1.106	1.032	0.991	1.142	1.148	1.127	1.061	0.924	1.168	0.871	1.047	0.973
		0.110	0.106	36.446	15.136	3.921	51.022	-12.376	12.738	-26.359	-16.115	-44.323	-7.053
LEV		0.256	0.237	0.241	0.288	0.243	0.131	0.406	0.386	0.251	0.180	0.214	0.277
		0.253	0.248	0.235	0.285	0.267	0.158	0.344	0.371	0.262	0.223	0.292	0.256
		1.483	-5.388	6.075	0.516	-11.625	-38.469	16.070	20.665	-7.393	-24.389	-52.988	17.885
BM		0.422	0.751	0.466	0.638	0.632	0.505	0.375	0.632	0.790	0.368	0.762	0.694
		2.682	16.421	0.659	0.662	0.543	0.354	0.518	0.975	0.777	0.364	0.660	0.699
		-3.508	-5.959	-1.021	-0.344	9.933	3.305	-2.778	-3.005	0.453	0.802	2.690	-0.333

Panel B: Return and Profitability Descriptive Statistics

ROE	0.077	0.057	0.034	0.031	0.026	-0.069	-0.927	1.096	0.094	-0.281	0.450	0.001
	0.119	-0.111	0.126	-0.755	0.117	-0.050	0.102	0.116	0.059	0.067	0.100	-0.000
	-1.067	6.948	-2.569	7.551	-1.519	-0.240	-0.930	3.766	0.998	-8.318	4.282	0.053
CF	0.061	0.051	0.060	0.059	0.044	0.009	0.029	0.029	0.062	-0.140	0.003	0.038
	0.062	0.069	0.058	0.076	0.058	0.042	0.054	0.037	0.052	-0.035	0.021	0.002
	-1.044	-7.180	2.385	-6.253	-6.694	-23.859	-8.631	-6.328	11.392	-37.083	-6.982	7.542
EBIT_MAR	0.043	-0.016	-0.066	-0.639	-0.443	-1.742	-1.598	0.017	-0.012	-17.730	0.018	-1.102
	0.075	0.050	-0.050	-5.519	0.034	-0.254	-0.163	0.185	0.020	-8.070	0.095	-0.137
	-2.244	-6.142	-0.519	10.781	-4.773	-5.256	-1.514	-11.954	-2.024	-5.218	-0.509	-8.969
GM	0.340	0.262	0.217	0.152	0.146	-0.847	-0.696	0.221	0.277	-14.841	0.350	-0.587
	0.323	0.285	0.176	0.042	0.361	0.285	0.234	0.279	0.237	-7.230	0.276	0.165
	2.168	-2.748	1.644	0.820	-5.184	-4.208	-1.029	-9.724	5.978	-4.262	0.583	-7.792
TAX	0.339	0.309	0.221	0.264	0.278	0.141	0.263	0.392	0.564	0.249	0.246	0.138
	0.300	0.131	0.369	0.276	0.344	0.162	0.018	0.329	0.306	0.207	0.204	0.216
	1.820	5.471	-3.440	-0.289	-3.618	-1.018	3.346	2.985	1.382	0.862	0.986	-1.205
BHR12	1.211	1.223	1.212	1.240	1.215	1.320	1.261	1.166	1.239	1.322	1.144	1.232
	1.217	1.241	1.208	1.257	1.176	1.312	1.293	1.151	1.229	1.318	1.212	1.208
	-1.006	-2.006	1.176	-2.261	5.777	1.258	-2.815	6.934	1.854	0.631	-23.983	6.033

Panel C: Sample Firms Statistics by Industry

Total Firms	1,073	492	1,937	1,006	375	3,793	724	357	2,053	2,069	6,913	3095
Govt. Dep.	135	95	500	98	65	908	74	161	260	486	229	553
Non_Dep.	938	397	1,437	908	310	2,885	650	196	1,793	1,583	6,684	2,542
Govt. Sales	18	309	941	121	118	404	649	59	304	402	1,170	271

Table 3:
Return Predictability of Government-Firm Relationship Variables Interacted with Industry Groupings

RPT (report) is a binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm reports any government entity as a major customer. The variable STR (strength) is the number of times a firm reports any government entity as a major customer till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. SRP (surprise) is the number of surprise reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. And, SLE (sale) is a firm's total sales to all government entities as a percentage of the firm's total sales for the year. The suffixes of _T3, _O, and _F indicate that the variables are interacted with industry group dummies as explained in section I.B. Left hand side variable here is monthly returns. All models use precision-weighted Fama-MacBeth regressions, the number of observations for the months used as proxy for precision. Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret	M_Ret
RPT_T3	0.00408***											
	(3.300)											
RPT_O		-0.0000597										
		(-0.057)										
RPT_F			0.00304									
			(1.440)									
STR_T3				0.0735***								
				(4.293)								
STR_O					0.0203							
					(1.392)							
STR_F						0.0329						
						(1.164)						
SRP_T3							0.154***					
							(4.216)					
SRP_O								0.0655**				
								(2.541)				
SRP_F									0.0724			
									(1.190)			
SLE_T3										0.0000697***		
										(2.739)		
SLE_O											-0.0000475	
											(-1.570)	
SLE_F												-0.00000208
												(-0.026)
Constant	0.0161***	0.0163***	0.0163***	0.0159***	0.0162***	0.0163***	0.0160***	0.0162***	0.0163***	0.0137***	0.0163***	0.0163***
	(6.820)	(6.795)	(6.822)	(6.757)	(6.737)	(6.812)	(6.788)	(6.779)	(6.814)	(6.017)	(6.828)	(6.825)
N_g	432	432	432	432	432	432	432	432	432	432	432	432

Table 4:
Return Predictability of Government-Firm Relationship Variables (Size Terciles)

RPT (report) is a binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm reports any government entity as a major customer. The variable STR (strength) is the number of times a firm reports any government entity as a major customer till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. SRP (surprise) is the number of surprise reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. And, SLE (sale) is a firm's total sales to all government entities as a percentage of the firm's total sales for the year. The suffix _T3, indicates that the variables are interacted with top three industry grouping dummy. BM and MCAP are log of previous year's book-to-market ratio and market capital, respectively. AG is lagged asset growth calculated as Cooper, Gulen, and Schill (2008) and BHR12 is past 12 months' buy and hold return. All BM, MCAP, AG, and BHR12 are industry median adjusted using FF 49 industries classification. All models use precision-weighted Fama-MacBeth regressions, the number of observations for the months used as proxy for precision. Each month all sample firms are equally divided into three size terciles using firms' MCAP at month *t-1*. The sample period is January 1979 to December 2014 and only includes the observations in which month-end stock price is at least $3. Left hand side variable is monthly returns.

	Small				Medium				Large			
RPT_T3	0.00467***				0.00799***				0.00278**			
	(3.570)				(5.324)				(2.379)			
STR_T3		0.0691***				0.101***				0.0430***		
		(4.344)				(5.034)				(2.673)		
SRP_T3			0.138***				0.251***				0.112**	
			(2.833)				(4.733)				(2.096)	
SLE_T3				0.000123***				0.000200***				0.0000470*
				(4.813)				(4.488)				(1.778)
BM	0.00255***	0.00255***	0.00255***	0.00336***	0.00173***	0.00175***	0.00178***	0.00172***	-0.0000578	-0.0000527	-0.0000383	-0.0000719
	(3.767)	(3.784)	(3.780)	(5.689)	(2.823)	(2.851)	(2.922)	(2.973)	(-0.089)	(-0.082)	(-0.060)	(-0.112)
MCAP	-0.0240***	-0.0239***	-0.0239***	-0.0164***	-0.0287***	-0.0287***	-0.0286***	-0.0255***	-0.00560***	-0.00563***	-0.00559***	-0.00536***
	(-34.221)	(-34.129)	(-34.026)	(-31.138)	(-30.379)	(-30.359)	(-30.347)	(-33.343)	(-13.541)	(-13.592)	(-13.692)	(-13.490)
AG	-0.00985***	-0.00981***	-0.00987***	-0.00739***	-0.00663***	-0.00661***	-0.00665***	-0.00673***	-0.00146*	-0.00147*	-0.00148**	-0.00151**
	(-11.617)	(-11.662)	(-11.769)	(-9.473)	(-10.353)	(-10.318)	(-10.367)	(-10.057)	(-1.951)	(-1.956)	(-1.986)	(-2.004)
BHR12	-0.0194***	-0.0195***	-0.0195***	-0.0278***	-0.0149***	-0.0150***	-0.0149***	-0.0189***	-0.000239	-0.000235	-0.000208	-0.000698
	(-14.216)	(-14.293)	(-14.256)	(-15.492)	(-9.486)	(-9.512)	(-9.460)	(-9.817)	(-0.115)	(-0.113)	(-0.100)	(-0.328)
Constant	-0.0258***	-0.0258***	-0.0257***	-0.0221***	0.0153***	0.0151***	0.0153***	0.0133***	0.0266***	0.0266***	0.0266***	0.0261***
	(-9.244)	(-9.249)	(-9.203)	(-7.801)	(5.557)	(5.515)	(5.576)	(5.006)	(11.455)	(11.458)	(11.484)	(11.311)
Months	431	431	431	431	431	431	431	431	431	431	431	431

Table 5:
Return Predictability of Government-Firm Relationship Variables (Full Sample)

RPT (report) is a binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm reports any government entity as a major customer. The variable STR (strength) is the number of times a firm reports any government entity as a major customer till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. SRP (surprise) is the number of surprise reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm till date divided by the number of months the firm is in the sample to date since it's first reporting of government entity as a major customer. And, SLE (sale) is a firm's total sales to all government entities as a percentage of the firm's total sales for the year. The suffix _T3, indicates that the variables are interacted with top three industry grouping dummy. BM and MCAP are log of previous year's book-to-market ratio and market capital, respectively. AG is lagged asset growth calculated as Cooper et al. (2008) and BHR12 is past 12 months' buy and hold return. All BM, MCAP, AG, and BHR12 are industry median adjusted using FF 49 industries classification. All models use precision-weighted Fama-MacBeth regressions, the number of observations for the months used as proxy for precision. The sample period is January 1979 to December 2014 and only includes the observations in which month-end stock price is at least $3. Left hand side variable is monthly returns.

	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return
RPT_T3	0.00408***				-0.00298**	0.00226**			
	(3.300)				(-2.245)	(2.089)			
STR_T3		0.0735***			0.0614***		0.0439***		
		(4.293)			(2.933)		(3.029)		
SRP_T3			0.154***		0.0625			0.0914**	
			(4.216)		(1.452)			(2.333)	
SLE_T3				0.0000697***	0.0000194				0.0000541**
				(2.739)	(0.835)				(2.370)
BM						0.000559	0.000552	0.000552	0.000726
						(0.993)	(0.980)	(0.985)	(1.346)
MCAP						-0.00430***	-0.00428***	-0.00428***	-0.00204***
						(-11.800)	(-11.769)	(-11.755)	(-6.893)
AG						-0.00389***	-0.00386***	-0.00388***	-0.00319***
						(-8.855)	(-8.797)	(-8.865)	(-7.297)
BHR12						-0.00251*	-0.00254*	-0.00252*	-0.00394**
						(-1.768)	(-1.789)	(-1.773)	(-2.280)
Constant	0.0161***	0.0159***	0.0160***	0.0137***	0.0136***	0.0178***	0.0176***	0.0177***	0.0140***
	(6.820)	(6.757)	(6.788)	(6.017)	(6.036)	(7.568)	(7.509)	(7.543)	(6.160)
Months	432	432	432	432	432	431	431	431	431

Table 6:
FFC Alphas of the Portfolios of Government Dependent Firms (RPT_T3 as Sort Variable)

The factors MKT ($R_m - R_f$), SMB, MOM, HML, RMW, and CMA are downloaded from Kenneth French's website. RPT (report) is a binary variable that is equal to 1 for the following twelve firm-month observations of the firm once it reports any government entity as a customer. The subscript "_T3" indicates that the variable is interacted with top three industry dummy. At the beginning of each month, I sort all the firms in my sample into two groups: government dependent firms that are in T3 industry group (or RPT_T3=1) and whose month-end price is greater than 3 and the rest of the market. Then, at the beginning of the month I form the government firm portfolio that consists of all the firms in the first group. At the end of each month, I calculate the equal weighted and the value weighted returns of the portfolio. I then regress the monthly returns of the portfolio against the set numbers of FF and FFC factors to obtain factor alphas. Standard errors are clustered at year level. Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

	Equal Weighted Portfolios						Value Weighted Portfolios					
	Small		Medium		Large		Small		Medium		Large	
	FF3	FFC6	FF3	FFC6	FF3	FFC6	FF3	FFC6	FF3	FFC6	FF3	FFC6
MKT	0.824***	0.809***	1.021***	1.012***	1.011***	1.068***	0.882***	0.875***	1.013***	1.023***	0.989***	1.027***
	(23.493)	(18.716)	(27.385)	(34.264)	(26.875)	(30.850)	(25.765)	(21.467)	(26.403)	(32.856)	(18.161)	(18.973)
SMB	1.110***	1.065***	1.221***	1.141***	0.646***	0.664***	1.151***	1.107***	1.231***	1.159***	0.302***	0.312***
	(20.556)	(14.710)	(23.704)	(17.206)	(10.285)	(11.914)	(20.802)	(14.995)	(21.608)	(18.450)	(3.109)	(3.486)
HML	-0.117*	-0.144	-0.319***	-0.282***	-0.128	-0.222***	-0.149**	-0.190**	-0.328***	-0.301***	0.0186	-0.0716
	(-1.842)	(-1.573)	(-4.603)	(-4.026)	(-1.486)	(-3.188)	(-2.709)	(-2.294)	(-3.735)	(-3.756)	(0.191)	(-0.786)
RMW		-0.141		-0.235**		0.125		-0.126		-0.189*		0.0821
		(-1.535)		(-2.567)		(1.601)		(-1.297)		(-1.984)		(0.759)
CMA		0.0668		0.0341		0.258		0.107		0.0841		0.217
		(0.583)		(0.264)		(1.458)		(0.879)		(0.611)		(1.342)
Mom		-0.0342		0.0705		0.0789		-0.0208		0.112*		0.0333
		(-0.825)		(1.393)		(1.165)		(-0.478)		(1.891)		(0.417)
Constant	0.00798***	0.00874***	0.00944***	0.00978***	0.00833***	0.00644***	0.00786***	0.00834***	0.00983***	0.00949***	0.00635***	0.00515**
	(4.195)	(5.037)	(4.651)	(5.628)	(4.167)	(3.618)	(3.878)	(4.465)	(4.873)	(5.452)	(3.150)	(2.509)
Months	432	432	432	432	432	432	432	432	432	432	432	432

Table 7:
FFC Alphas of the Portfolios of Government Dependent Firms (SRP_T3 as Sort Variable)

The factors MKT ($R_m - R_f$), SMB, MOM, HML, RMW, and CMA are downloaded from Kenneth French's website. SRP (surprise) is the number of surprise reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm to date divided by the number of months the firm is in the sample to date since it's first reporting of government entity as a major customer. The subscript "_T3" indicates that the variable is interacted with top three industry dummy. At the beginning of each month, I sort all the government dependent firms that are in T3 industry group and whose month-end price is greater than 3 in five quintiles based on their SRP_T3 values at month $t-1$. Then, I form five quintile portfolios of government dependent firms that go long the stocks that fall within their corresponding groups. I also form a hedged portfolio (Q5MQ1) that goes long the quintile five portfolio and short the quintile one portfolio. At the end of each month, I calculate the equal weighted and the value weighted returns of all those portfolios. I then regress the monthly returns of each of those six portfolios against the set numbers of FF and FFC factors to obtain factor alphas. Standard errors are clustered at year level. Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

Panel A: FF3, FFC4, FF5, and FFC6 Factor Alphas

	Equal Weighted Portfolios						Value Weighted Portfolios					
	QTL 1	QTL 2	QTL 3	QTL 4	QTL 5	Q5MQ1	QTL 1	QTL 2	QTL 3	QTL 4	QTL 5	Q5MQ1
FFC6	0.00224	0.00771***	0.0103***	0.00885***	0.0132***	0.0109***	0.00436**	0.00576***	0.00816***	0.00701***	0.0165***	0.0122***
	(1.595)	(4.160)	(5.489)	(6.164)	(6.851)	(4.490)	(2.545)	(3.039)	(2.829)	(2.877)	(6.163)	(3.740)
FF5	0.00198	0.00784***	0.0101***	0.00876***	0.0131***	0.0111***	0.00430***	0.00598***	0.00815***	0.00691***	0.0172***	0.0129***
	(1.576)	(3.908)	(5.434)	(6.234)	(6.377)	(4.522)	(2.931)	(2.969)	(2.819)	(3.158)	(5.806)	(3.871)
FFC4	0.00398***	0.00732***	0.00943***	0.00803***	0.0117***	0.00777***	0.00601***	0.00650***	0.00898***	0.00753***	0.0148***	0.00875***
	(2.900)	(4.461)	(5.223)	(5.822)	(6.505)	(3.431)	(3.554)	(4.022)	(2.901)	(3.334)	(5.682)	(2.830)
FF3	0.00392***	0.00750***	0.00899***	0.00778***	0.0114***	0.00748***	0.00626***	0.00702***	0.00914***	0.00748***	0.0156***	0.00932***
	(3.051)	(3.899)	(4.666)	(5.206)	(5.812)	(3.403)	(4.475)	(3.831)	(2.825)	(3.847)	(5.397)	(3.099)
CAPM	0.00511**	0.00778***	0.00864***	0.00751***	0.0104***	0.00528**	0.00609***	0.00724***	0.00842**	0.00681***	0.0136***	0.00752**
	(2.698)	(2.930)	(3.382)	(3.414)	(3.812)	(2.247)	(4.141)	(3.623)	(2.506)	(3.263)	(4.461)	(2.685)

Panel B: FFC6 Factor Loadings

MKT	1.087***	0.980***	0.982***	1.003***	0.996***	-0.0908**	1.097***	1.114***	0.976***	0.998***	1.028***	-0.0684
	(30.821)	(47.098)	(39.340)	(28.801)	(25.957)	(-2.033)	(29.455)	(20.920)	(18.802)	(13.612)	(24.835)	(-1.224)
SMB	0.813***	0.921***	0.962***	1.005***	0.968***	0.155*	0.162*	0.267***	0.468***	0.322***	0.586***	0.424***
	(17.284)	(26.543)	(20.895)	(19.364)	(12.668)	(2.027)	(1.797)	(3.589)	(5.103)	(3.209)	(8.005)	(3.772)
HML	-0.0301	-0.159**	-0.256***	-0.288***	-0.392***	-0.362***	-0.252**	-0.0593	-0.423***	-0.322***	-0.495***	-0.243**
	(-0.548)	(-2.365)	(-5.191)	(-4.745)	(-7.171)	(-6.365)	(-2.664)	(-0.509)	(-5.033)	(-4.503)	(-7.804)	(-2.231)
RMW	0.308***	-0.232**	-0.323***	-0.310***	-0.367***	-0.675***	0.237**	0.0938	-0.0582	0.00862	-0.463***	-0.700***
	(4.781)	(-2.241)	(-4.979)	(-3.708)	(-2.940)	(-5.569)	(2.422)	(0.901)	(-0.606)	(0.089)	(-3.602)	(-4.825)
CMA	0.285**	0.295**	0.173	0.186*	-0.0119	-0.297*	0.375**	0.199	0.484**	0.241	-0.000136	-0.375**
	(2.469)	(2.658)	(1.545)	(1.867)	(-0.077)	(-1.924)	(2.463)	(1.133)	(2.319)	(1.291)	(-0.001)	(-2.328)
MOM	-0.0466	0.0248	-0.0330	-0.0150	-0.0105	0.0360	-0.0111	0.0432	-0.00153	-0.0191	0.130***	0.141
	(-0.742)	(0.564)	(-0.738)	(-0.339)	(-0.213)	(0.597)	(-0.143)	(0.554)	(-0.021)	(-0.211)	(3.260)	(1.677)
Months	432	403	413	429	432	432	432	403	413	429	432	432

Table 8:
Political Connections, Government Dependency, and the Winning of Government Contracts

GOV_REP (government report) is a dummy variable that is equal to 1 for a firm's firm-month observations for the year in which the firm reports government as a major customer. The variable is dummied out if a firm belongs to a FF 12 industry that never makes it to the Top Three industry group in my sample. $PI^{Candidates}$, $PI^{Strength}$, PI^{Power}, $PI^{Ability}$ are obtained from the authors of Cooper et al. (2010). $PI^{Candidates}$ is the number of supported candidates, $PI^{Strength}$ is the strength of the relationships between candidates and the contributing firm, PI^{Power} is the power of the candidates, and $PI^{Ability}$ is the ability of the candidates to help the firm. MCAP, Sale, Employees, and BM are natural logarithm of previous year's market capital, total sales amount, number of employees, and book-to-market ratio, respectively. No. Bus. Segments and No. Geo Segments are the firm's business segments and the number of firm's geographic segments respectively. Leverage is the sum of debt in current liabilities and long term debt divided by the total assets. Cash Flow is operating income before depreciation minus the sum of interest, income taxes, preferred dividends, and common dividends divided by total assets. Market Share is firm's total sales divided by FF 49 industry total sales. Herfindahl Index is Herfindahl index of indutry concentration computed with firm net sales figures from Compustat. Regulation Indicator is a dummy variable equal to 1 if a firm operates in the financial services industry or in the utilities industry and 0 otherwise. Govt. Purchases/Sale is total government purchases for the year for the FF 49 industry divided by the total sales for the year for the industry. And, No. Pol. Active Firms is the number of firms in a firm's industry with an established political action committee (PAC). Due to the availability of the information, the sample period is restricted to January 1984 through December 2004 and only includes the observations in which month-end stock price is at least $3.

	1 if a Firm Reports Government as Major Customer in Current Year; 0 otherwise						
GOV_REP_{Lag76}						2.180***	
						(19.395)	
GOV_REP_{Lag120}							1.844***
							(16.912)
$PI^{Candidates}$	0.00170***				-0.00134	0.00174**	0.00129
	(7.766)				(-1.915)	(2.734)	(0.982)
$PI^{Strength}$		0.0000428***			-0.00000301	-0.0000119	0.0000121
		(10.265)			(-0.510)	(-1.014)	(1.126)
PI^{Power}			0.000538***		0.000709**	-0.000155	-0.000191
			(8.317)		(2.898)	(-0.738)	(-0.500)
$PI^{Ability}$				0.0236***	0.0153***	0.00217	0.00550
				(9.123)	(8.642)	(0.937)	(1.916)

Table 8 Continued...

MCAP	-0.0481***	-0.0453***	-0.0493***	-0.0480***	-0.0513***	-0.0478*	-0.0778***
	(-4.196)	(-4.052)	(-4.269)	(-4.297)	(-4.418)	(-2.214)	(-4.422)
Sale	-0.198***	-0.198***	-0.199***	-0.201***	-0.201***	-0.215***	-0.247***
	(-11.486)	(-11.397)	(-11.483)	(-11.464)	(-11.533)	(-5.931)	(-6.138)
Employees	0.204***	0.208***	0.205***	0.204***	0.205***	0.217***	0.251***
	(9.256)	(9.367)	(9.256)	(9.122)	(9.224)	(4.896)	(4.913)
No. Bus. Segments	0.0382***	0.0390***	0.0375***	0.0414***	0.0387***	-0.0206	-0.0249*
	(5.711)	(5.639)	(5.520)	(6.245)	(5.695)	(-1.940)	(-2.491)
No. Geo. Segments	-0.0403***	-0.0414***	-0.0402***	-0.0399***	-0.0394***	-0.0157	-0.0111
	(-6.082)	(-6.275)	(-5.953)	(-5.784)	(-5.630)	(-1.289)	(-1.194)
BM	0.00247	0.00265	0.00246	0.00234	0.00230	-0.000902	-0.00215
	(1.145)	(1.205)	(1.142)	(1.098)	(1.082)	(-0.990)	(-1.299)
Leverage	-0.307***	-0.311***	-0.307***	-0.306***	-0.307***	-0.0322	-0.0594
	(-6.374)	(-6.326)	(-6.334)	(-6.282)	(-6.312)	(-0.497)	(-1.090)
Cash Flow	0.104	0.0914	0.104	0.112	0.113	0.110	-0.232
	(1.594)	(1.439)	(1.603)	(1.707)	(1.723)	(0.825)	(-1.404)
Market Share	5.914*	6.351*	5.051	8.530**	6.021*	4.590	9.145**
	(2.151)	(2.289)	(1.863)	(3.088)	(2.241)	(1.348)	(3.125)
(Market Share)2	-83.55**	-94.73***	-82.99**	-82.45**	-80.38**	-26.85	-77.29**
	(-2.944)	(-3.453)	(-2.918)	(-2.941)	(-2.843)	(-1.202)	(-3.274)
Herfindahl Index	19.28***	19.53***	19.39***	19.01***	19.21***	13.90***	16.60***
	(5.543)	(5.587)	(5.557)	(5.439)	(5.520)	(5.426)	(4.779)
Regul. Indicator	-0.172	-0.174	-0.172	-0.186	-0.180	-0.498**	-0.870**
	(-0.915)	(-0.927)	(-0.917)	(-0.972)	(-0.947)	(-3.181)	(-3.236)
Govt. Purchase/Sale	4.409***	4.403***	4.396***	4.405***	4.389***	2.754***	2.880***
	(34.935)	(34.866)	(34.743)	(35.036)	(34.647)	(12.750)	(12.143)
No. Pol. Active Firms	0.0144***	0.0146***	0.0144***	0.0138***	0.0139***	0.0145***	0.0196***
	(5.014)	(5.068)	(4.992)	(4.761)	(4.803)	(6.688)	(5.036)
Constant	-0.559***	-0.570***	-0.550***	-0.546***	-0.531***	-0.928***	-0.558***
	(-6.474)	(-6.454)	(-6.377)	(-6.321)	(-6.188)	(-7.016)	(-4.269)
Observations	761,022	761,022	761,022	761,022	761,022	437,328	279,329

Table 9:
Firm Profitability and Implied Tax Rate between Government Dependent and Non-dependent Firms and Change in Firm Characteristics Post Government Reporting

Table presents the two-sample t-test results on firm characteristics. Log Assets is natural logarithm of total assets (*at*). Market Capital is the log of price (*prc*) times share outstanding (*shrout*) at the end of the month (*t*). Market share (M_SHARE) is firm's sale (*at*) divided by the FF 49 industry total sale. Profit is calculated as operating income before depreciation (*oibdp*) divided by total assets (*at*). Gross Margin is calculated as gross profit (*gp*) divided by sales_turnover (net)(*sale*). Net Margin is net income (*ni*) divided by total sales (*sale*). Cash Flow is calculated as operating income before depreciation (*oibdp*) minus the sum of interest (*xint*), income taxes total (*txt*), dividends - preferred (*dvp*), and dividends - common (*dvc*) divided by assets total (*at*). ROA is operating income before depreciation (*oibdp*) divided by assets total (*at*). Leverage is calculated as the sum of the debt in current liabilities total (*dlc*) and long term debt total (*dltt*) divided by the assets total (*at*). Tax Rate is income tax total (*txt*) divided by pretax income (*pi*). And, Tax Rate - Fed is income taxes - federal (*txfed*) divided by pretax income (*pi*). Sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

	(1 = Government Dependent Firms) minus (0 = Government Non-dependent Firms)	(1 = Government Dependent Firm Pre) minus (0 = Post Government Reporting
Log Assets	0.041***	0.825***
	(11.26)	(89.200)
Log Market Capital	0.022***	0.676***
	(6.48)	(74.333)
Market Share	0.001***	0.003***
	(49.713)	(46.103)
Op. Profit Margin	-0.320*	1.696***
	(-1.752)	(9.597)
Gross Margin	-0.539***	1.566***
	(3.034)	(8.932)
Net Margin	-0.328*	1.721***
	(-1.679)	(9.283)
Cash Flow	-0.006***	0.033***
	(-7.021)	(31.626)
ROA	-0.021***	0.024***
	(-9.706)	(22.971)
Leverage	0.017***	-0.004***
	(40.415)	(-4.311)
Tax Rate	0.002	-0.104***
	(0.074)	(-6.260)
Tax Rate - Fed	0.028***	-0.025**
	(3.284)	(-2.594)
Avg Obs	1,928,680	277,171

Table 10:
Risks and Uncertainty Proxies and the Government Dependent Firms' Stock Returns

First two columns are two sample t-test of returns between government dependent and non-dependent firms during US presidential election and post election years respectively. Election years are defined as two years leading to the elections, and post presidential election years are defined as two years followed by the elections. Columns three to six are four uncertainty indexes data downloaded from economic political uncertainty website. The website uses Baker et al. (2016) to calculate these uncertainty indexes. Second last column is idiosyncratic volatility is Fama-Franch 3 factor idiosyncratic volatility calculated using Ang et al. (2006). Last column is tail Risk measure is calculated using Kelly and Jiang (2014). All the sensitivities are the absolute values of slope coefficients of the regression between particular stock's monthly returns and the index values. Regression is run on 1 (Government Dependent Firms) minus 0 (Government Non-Dependent Firms) and sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

	Return Differential		Political Uncertainty				Other Risks	
	Election Years	Post Election Years	Economic Political Uncertainty Sensitivity	Geopolitical Risks Sensitivity	Government Spending Uncertainty Sensitivity	Regulation Uncertainty Sensitivity	Idiosyncratic Volatility	Tail Risks Sensitivity
	0.00795***	0.0000875						
	(16.701)	(0.196)						
			0.000104***					
			(79.580)					
				0.000105***				
				(8.570)				
					0.0000652***			
					(12.936)			
						0.000106***		
						(5.446)		
							0.00361***	
							(89.484)	
								0.224***
								(12.546)
Obs	1,135,075	1,146,527	1,174,071	1,173,644	1,184,702	1,184,702	2,291,356	1,563,088

Table 11:
Mis-pricing Proxies and the Government Dependent Firms' Stock Returns

Price Delay Measure is calculated using Hou and Moskowitz (2005). Variance ratios are calculated using Lo and MacKinlay (1988). Information uncertainty proxies are calculated using Zhang (2006). Market Value is the market capitalization (in millions of dollars) at the end of month *t*. Firm Age is the number of years since the firm was first covered by CRSP. Analyst Count is the number of analysts following the firm in the previous year. Forecast Dispersion is the standard deviation of analyst forecasts in month t scaled by the prior year-end stock price. St. Dev of Cash Flow is the standard deviation of cash flow from operations in the past 5 years, where cash flow from operations is earnings before extraordinary items minus total accruals, scaled by average total assets. Then, as proxy variables for information uncertainty, following Zhang (2006), I use reciprocals of Firm Age, Analyst Count, and Market Value. Sentiment data is downloaded from Professor Wurgler's website and market state is calculated using Cooper et al. (2004). Regression is run on 1 (Government Dependent Firms) minus 0 (Government Non-Dependent Firms) and sample period is January 1979 through December 2014 and only includes the observations in which month-end stock price is at least $3.

	Price Efficiency		Information Uncertainty					Aggregate Sentiment	
	Price Delay Measure	Variance Ratios (4-Week Lag)	Reciprocal of Firm Age	Reciprocal of Analyst Count	St. Dev of Cash Flow	Analyst Forecast Dispersion	Reciprocal of Market Value	Market State Sensitivity	Sentiment Index Sensitivity
	-0.0189***								
	(-26.110)								
		-0.0214***							
		(-24.923)							
			-0.0111***						
			(-109.538)						
				-0.0115***					
				(-18.851)					
					-0.00940***				
					(-5.508)				
						-0.00523			
						(-0.287)			
							0.00000188***		
							(7.845)		
								0.0117**	
								(2.809)	
									0.00571***
									(13.332)
Obs	2,180,739	2,241,776	2,235,127	960,837	1,922,058	688,436	2,231,936	1,563,088	1,563,088

Appendix A. Variable Definitions

AT: Total Assets.

AG: Year over year assets growth.

BHR12: Past 12 months' buy-and-hold return.

BM (Book-to-Market): I calculate book-to-market following Cooper et al. (2010). Book equity is common ordinary equity total (*ceq*) plus deferred taxes and investment tax credit (*txditc*) minus book value of preferred stock (in the following order: preferred stock redemption value (*pstkrv*) or preferred stock liquidating value (*pstkl*) or preferred stock at carrying value (*upstk*) and market equity is price close - calender (*prcc_c*) times common shares outstanding (*csho*).

CF (Cash Flow): Operating income before depreciation(*oibdp*) minus the sum of interest and (*xint*), income taxes total (*txt*), dividends - preferred (*dvp*), and dividends - common (*dvc*) divided by assets total (*at*).

CMA (Conservative Minus Aggressive): The average return on the two conservative investment portfolios minus the average return on the two aggressive investment portfolios.

EBITDA (Earning Before Interest Tax Depreciation and Amortization): Sum of earning before interest and taxes (*ebit*) and depreciation and amortization (*dp*).

EBITDA_COV (EBITDA Coverage): EBITDA divided by the sum of Debt in current liabilities total (*dls*) and Long term debt total (*dltt*).

EBIT_Margin: Earning before interest and taxes (*ebit*) divided by sales_turnover (net)(*sale*)

GM (Gross Margin): Gross profit (*gp*) divided by sales_turnover (net)(*sale*).

HML (High Minus Low): The average return on the two value portfolios minus the average return on the two growth portfolios.

LEV (Leverage): The sum of debt in current liabilities total (*dlc*) and long term debt total (*dltt*) divided by assets total (*at*).

MCAP (Market Capital): is market capital calculated as price (*prc*) times share outstanding (*shrout*) at the end of the month (*t*).

MKT (Market): Excess return on the market.

MOM (Momentum): The average return on the two high prior return portfolios minus the average return on the two low prior return portfolios.

M_SHARE (Market Share): Firm's sale (*at*) divided by Fama French 49 industry total sale.

PROD (Productivity): Total factor productivity is calculated using Faccio (2010). To estimate productivity, the paper assumes the standard Cobb-Douglas production function of $Y_i = P_i K_i^{\alpha} L_i^{\beta} M_i^{\gamma}$. To estimate P_i, the author takes the natural log of

above equation to get $y_i = p_i + \alpha k_i + \beta l_i + \gamma m_i + \epsilon_i$. Using the OLS, the author gets productivity $\hat{p}_i = y_i - \hat{\alpha} k_i - \hat{\beta} l_i - \hat{\gamma} m_i$.

RMW (Robust Minus Weak): The average return on the two robust operating profitability portfolios minus the average return on the two weak operating profitability portfolios.

ROA (Return on Assets): Operating income before depreciation (*oibdp*) divided by assets total (*at*).

ROE (Return on Equity): Income before extraordinary items (*ib*) divided by common ordinary equity total (*ceq*).

SMB (Small Minus Big): The average return on the nine small stock portfolios minus the average return on the nine big stock portfolios.

TAX: Income tax total (*txt*) divided by pretax income (*pi*).

Appendix B. Additional Tables

Table A1:
Return Predictability of Government-Firm Relationship Variables (Unadjusted Variables)

RPT (report) is a binary variable that is equal to 1 for a firm's subsequent twelve firm-month observations once the firm reports any government entity as a major customer. The variable STR (strength) is the number of times a firm reports any government entity as a major customer till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. SRP (surprise) is the number of surprise reporting (i.e., reporting of any government entity as a customer followed by a year in which the firm did not report any government entity as a customer) by the firm till date divided by the number of months the firm is in the sample since it's first reporting of government entity as a major customer. And, SLE (sale) is a firm's total sales to all government entities as a percentage of the firm's total sales for the year. BM and MCAP are log of previous year's book-to-market ratio and market capital, respectively. AG is lagged asset growth calculated as Cooper et al. (2008) and BHR12 is past 12 months' buy and hold return. Compare to the variables in previous tables, none of the relationship variables are dummied out with any industry grouping dummy and non of the BM, MCAP, AG, and BHR12 are industry adjusted . All models use precision-weighted Fama-MacBeth regressions, the number of observations for the months used as proxy for precision. The sample period is January 1979 to December 2014 and only includes the observations in which month-end stock price is at least $3. Left hand side variable is monthly returns.

	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return	M_Return
RPT	0.00242***				-0.000240	0.000771			
	(3.029)				(-0.232)	(1.038)			
STR		0.0408***			0.00254		0.0138		
		(3.443)			(0.178)		(1.204)		
SRP			0.130***		0.0628			0.0468	
			(3.986)		(1.207)			(1.130)	
SLE				0.0000546***	0.0000271				0.0000300
				(2.595)	(1.341)				(1.602)
BM						-0.000798	-0.000814	-0.000802	-0.000222
						(-1.100)	(-1.120)	(-1.115)	(-0.318)
MCAP						-0.00434***	-0.00435***	-0.00435***	-0.00208***
						(-10.897)	(-10.882)	(-10.957)	(-6.317)
AG						-0.00390***	-0.00389***	-0.00390***	-0.00320***
						(-9.277)	(-9.234)	(-9.267)	(-7.743)
BHR12						-0.00288**	-0.00289**	-0.00289**	-0.00426**
						(-2.015)	(-2.029)	(-2.023)	(-2.434)
Constant	0.0161***	0.0160***	0.0160***	0.0137***	0.0136***	0.0437***	0.0437***	0.0437***	0.0298***
	(6.787)	(6.771)	(6.810)	(6.011)	(5.983)	(10.919)	(10.934)	(10.991)	(7.793)
Months	432	432	432	432	432	431	431	431	431